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ABSTRACT

Four issues of the 1985/86 newsletter of a preparatory school for learning disabled (LD) students examine the following topics: myths and realities concerning LD students at the college level: a support group for LD students at a large state university; a developmental mathematics program; a competitive basketball program; positive personality qualities of dyslexic adults; LD socialization disorders; the relationship of organic dysfunction to social development; adopted children at risk for learning disabilities; and classroom management for students with auditory processing problems. (JW)

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Hill Top Spectrum

Volume 3

Numbers 1-4

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HILL TOP Spectrum
Hill Top Preparatory School
Rosemont, Pennsylvania 19010
Vol. 3, No. 1 September, 1985

Educator Examines Myths, Realities of LD Students at College Level

Elissa L. Fisher, Ed.M.

(This article is a transcription of a lecture given as part of the Gettysburg College January Term Lecture Series, January, 1985).

As more and more learning disabled students are seeking admission to colleges and universities, myths abound in regard to their capacities, abilities, and their supposed adverse influence on competitive intellectual and educational settings.

First came the myth that learning disabilities really did not exist because the handicaps they produce are primarily invisible. These students were, as one successful business man told me, just lazy coddled kids.

This was followed by the myth that these students were really retarded and that the term learning disabled was nothing more than a middle or upper class cover-up. While there may have been some foundation in truth for this arising from some questionable labeling practices in certain locales, it was a most unfortunate generalization.

A third was that learning disabilities are outgrown or cured. "But as the children who had received some services grew up, still exhibiting deficits, services expanded to junior and senior high schools." (Cordoni) Many "graduated" looking for jobs and some wanted to go to college.

From others who were somewhat more enlightened came the myth that learning disabled students, while not retarded and though motivated, were so educationally retarded and otherwise impaired that they would be unable to keep the pace set by or demanded of classmates who learn "normally."

Then came the myth that assumed that college success was unrealistic because of the need for fully developed language skills which are usually not present in the learning disabled. Therefore, it is cruel to encourage them to even dream of college because they will not be able to handle it.

This produced a backlash and learning disabled advocates and parents of the learning disabled, armed with federal legislation about entitlement to appropriate education, countered with the myth that *all* learning disabled students should be able to go to college. Of course, the sub-myth here is that the word "appropriate" can be satisfactorily defined.

Faced with the learning disabled students at their doorsteps as a result of Section 504 of the Rehabilitation Act of 1973, some college admissions and curriculum people said, "Okay, we'll take them," but they fostered the myths that there was no way to really assess who these students were and that getting the cooperation needed between the disciplines to meet their needs would be impossible. Others accepted learning disabled students on the basis of the myth that the students, with a "little help", could handle the full academic load, were secure enough to seek and use all of the resources available to them in the institution, could learn and perform in the same manner as their fellow students and would be able to set post college goals in the same time frame as others.

When these myths failed to hold up, a new set took their place. This time, they were born out of the fears of the college and university faculties that the presence of learning disabled students was going to place unwanted restraints on course design and conduct, and that faculty workloads would be significantly increased to accommodate these students.

The answer to this was another myth that these students could be helped with tutorial assistance to get them to meet various course deadlines. "Cordoni's 1980 survey of post secondary programs for learning disabled revealed that only 14 of the 121 institutions that accepted such students reported they provided more than basic tutorial programs." (Cordoni)

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Myths and Realities

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Fortunately, the outlook is changing. While still insufficient, each day new opportunities open as the public, government, colleges and universities become more aware of what learning disabilities really are and are not; of the problems and needs of the learning disabled; and of the methods for operationalizing the services which make it possible for these young people to acquire the college education to which many are entitled by virtue of desire and intellectual capacity.

While controversy still exists around the issues of definition and what is seen as a lack of objective measurement (Bricklin and Gallico, 1984), we firing line educators, social workers and psychologists are faced with the mandate to help these people today. We do not have the luxury of returning to the laboratory for further study before we commit to action.

So, where do we begin? We begin with the definition set forth by The National Joint Committee on Learning Disabilities in 1981: "Learning disabilities is a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities. These disorders are intrinsic to the individual and presumed to be due to central nervous system dysfunction. Even though a learning disability may occur concomitantly with other handicapping conditions (e.g., sensory impairment, mental retardation, social and emotional disturbance) or environmental influences (e.g., cultural differences, insufficient or inappropriate instruction, psychogenic factors), it is not the direct result of those conditions or influences."

What do we know about them as they present at the college level? What are the realities? We know that these are students who are disabled, not just students with learning differences. They present with a number of types of disabilities; some are receptive, some are integrative, others are expressive, still others diffuse. We know that there will be more males than females with these handicaps. We know their intelligence will be average or above.

We know much, although not all, about the etiology of learning disabilities. We know about dyslexia and genetic factors. We know about the dangers of drugs and poor nutrition and oxygen deprivation and saturation. We are finding out about testosterone and hemispheric lateralization and assymetries. (The new neurological imaging techniques offer answers previously not possible). We know these students have neurological dysfunctions that result in impaired information processing. They have trouble taking information in through the senses, interpreting it, inter-relating it and then expressing their knowledge in an organized fashion. We know the learning disabled person's brain is not geared for rapid storage and retrieval of information. Despite this, many are able to meet the same intellectual requirements of other college admissions candidates. Because they exhibit no outward manifestations of handicaps, they experience credibility problems when seeking assistance and find themselves in awkward situations accordingly. As a result they are emotionally bruised because of the wounds experienced along the way. Their trust level is not high, particularly where educators are concerned. While their self-confidence has been sufficient to get them to college, it is easily eroded.

What do we know more specifically? Some have difficulty with written symbols; others are unable to communicate effectively through written language. They reverse letters and numbers and leave off endings, substitute and omit letters and words. Problems with handwriting, syntax, formulation and spelling are most prevalent. In composition, they use a limited number of words and avoid words of more than three syllables. While they read well enough to get into college, they read slowly, have difficulty skimming and finding main ideas. Phonics are not always under control.

Another group is for all practical purposes "lecture deaf" (aural receptive dysphasia) or they cannot listen to a lecture and take notes at the same time. Still others experience difficulty with sequential memory tasks involving letters, numbers and following step-by-step instructions.

For some students, distractibility is the problem. They still over-react to stimuli. Background noise or certain kinds of visual stimulation interfere with their ability to pay attention. Anxiety is frequently exhibited when they are in a group meeting or classroom setting, and rather than showing more obvious physical forms of hyperactivity, they are pencil tappers, knee jigglers, and squirmers.

Those afflicted with space organization handicaps confuse up and down, right and left. They get lost in buildings or going from one part of campus to another. They also may become disoriented when a familiar environment is rearranged. These are the students who will be standing *near*, but not *in* the line at registration. They will be unable to find the materials in the library or to locate texts in the bookstore.

Such a space organization handicap can play into a time organization problem. Because they need more time to get organized and then get lost, they arrive late for classes. Occasionally at the college level, you will find a student who can tell time only with a digital watch. Time problems further make it difficult for some to consistently adhere to even simple schedules. Repeatedly forgetting things, losing possessions and seeming personally disorganized or "wifty" are common happenings.

We know that they may experience great difficulty in making choices and will often try to get a significant adult, professor, advisor or friend to make their decisions.

An area of recurring weakness may be that of communication as a whole. These students cannot handle the pragmatics of language. They misinterpret intent, or non-verbal signals, speak in non-sequitors, scramble metaphors, or display a lag in verbal response time. Sarcasm and other forms of humor are often lost or taken as insults. By the time they reach college they may, with special assistance, have found a way to handle figurative language, but not always—resulting in many of the difficulties foreign students experience if they come to the U.S. with only textbook English mastered.

A number of these young people will exhibit difficulty in initiating various kinds of activities and will display a need to check each step, hesitating to proceed without confirmation of proper attack method, strategy, or direction.

We see some learning disabled students present as shy, egocentric, inflexible, immature and lacking in social skills. They may display poor impulse control, excessive frustration, anxiety, denial, projection, anger, depression, strong dependency needs, or health problems because of the difficulty with and energy drain in coping with school andor stressful social situations. They misunderstand and are misunderstood.

We know some will spend inordinate time on assignments due to the pace at which they work, memory deficits and the need to overlearn. Sleep deprivation is not uncommon. Another group will give up; a third engage in excessive socializing to be accepted, party too much, and not make it.

Given this picture and the high cost of disabled student programs, why should colleges and universities attempt to serve the learning disabled? This question has been discussed at length. Usually someone mentions early on that colleges and universities serve these students because it is the law. But our consideration of this must go beyond Section 504 of the Rehabilitation Act of 1973. As Margaret Rawson states so succinctly in *Dyslexia as Adults: The Possibilities and the Challenge* (Rawson, 1977), "Unused aptitude makes trouble for their owners and their world." I have, unfortunately, had opportunities to contemplate this as I waited in a courtroom to testify in behalf of a learning disabled adolescent charged with some act of delinquency. Even with the cost of special programs at the higher education level, it is still good business to invest in a method that ensures a worthwhile return rather than invest in welfare programs or prison costs.

Further, untapped potential in whatever form is wasted for society. While only some of those learning disabled who successfully complete programs of higher education will become eminent in the sense of Albert Einstein, Woodrow Wilson, or Thomas Alva Edison, the contribution they can make with appropriate education is significant. At a time when administrators are quick to speak about the social mission of their institutions, can qualified individuals, handicapped or otherwise, be denied the opportunity to reach as far as possible in developing their potential? Fred Barbaro in speaking in support of the special program at Adelphi summed it up by saying, "We (the college administrators) should at least make the same effort we are asking them (the learning disabled) to make which is rather extraordinary." (Barbaro)

Assuming then that the desire of a college or university to serve these young people goes beyond the fear of violating anti-discrimination laws or economic viability, what conceptual program design and operational considerations are there in setting up a workable, realistic, appropriate and successful program to meet the needs of the learning disabled?

At the outset, we must consider the federal regulation itself. Under Section 504, specifically Sub-part E, the right is guaranteed of entrance for qualified handicapped students into our nation's colleges and universities. The college or university may not limit the number of handicapped students admitted. Further, preadmission inquiries as to whether an applicant is handicapped are prohibited. This assumes then that all students who are learning disabled will be counseled properly by their high school guidance counselors and will present themselves as learning disabled to the institution in question. This is a large assumption but not out of the realm of possibility. If the guidance counselors make use of the tools available in the form of college catalogs or directories of colleges and universities that offer support programs, and couples this with a thorough knowledge of the student's strengths and weaknesses, a good match can be found. It benefits the colleges, therefore, to place in their literature statements encouraging students to be honest about such handicaps and to explain their programs in detail.

Since no definition of the "qualified" student is given in the regulation, the issue of assessment becomes critical. The following assessment components are a must:

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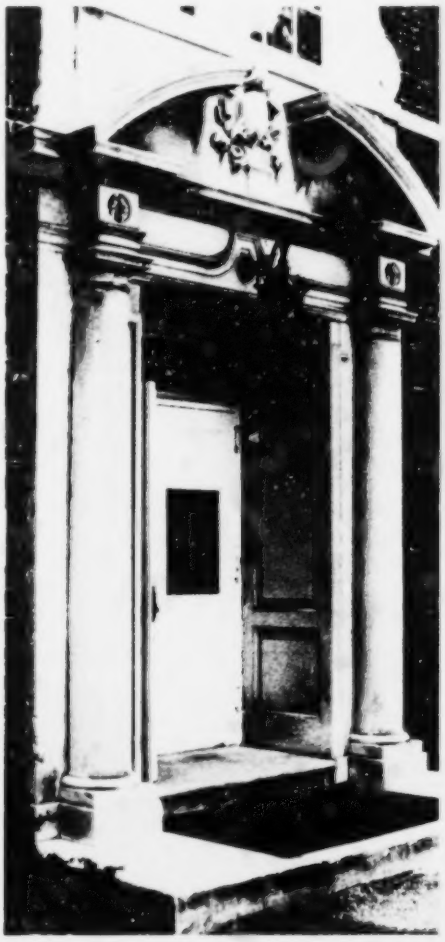

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Myths and Realities

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1. The acquisition of the high school transcript and school records including achievement test data (This data usually reveals functioning below what would be expected of someone with their intelligence.)
2. A statement of the type of secondary program, special or otherwise, from which the student is graduating; has there been a transitional college year experience?
3. Documentation of the handicapping conditions
4. An IEP or similar document, if available
5. A recommendation from the learning disabilities specialist or guidance counselor: recommendations from two content teachers, one in an area of strength and one in an area of weakness, and one from an employer
6. A *handwritten* essay (must not be typed or word processed). This may take the form of a personal statement which requires the students to put in their own words what their disabilities are as they see them, what compensation skills have been acquired, and to generalize about personal experiences and aspirations in a concise one page format. Through such an essay, content can be compared with mechanics.
7. An interview with the student conducted by the director of admissions, the learning disabilities specialist if one is on staff, and representatives from the educational services and the social services offices. This allows the college team to assess the student's verbal ability while ascertaining if the student has accepted the disability, grasps it intellectually, can clearly explain it and give some statement of services needed to achieve, as well as the candidate's motivation.
8. The student must have demonstrated ability to handle longterm assignments and show reasonable independence in learning. Straight special education is not sufficient preparation for liberal arts college acceptance.
9. Test results:

   a) A current WAIS-R — Some colleges and universities with special programs report average I.Q. acceptances of 101 full scale; scatter should be apparent in these scores, indicating even greater potential, and verbal scores should surpass the performance scores for the greatest chance of success. Some programs require a complete psychological to rule out emotional disturbance.

   b) SAT results — timed and untimed scores should be reviewed, but this may be the worst possible way to assess a learning disabled student's candidacy for college since neither these scores nor that of the I.Q.'s correlate with day-to-day performance. The guidance counselor's and teacher's grade reports are most valid; achievement scores need to be near 20% on N.S. Batteries in reading and English

   c) Though programs in existence vary greatly, we recommend that the following assessment be done before formal acceptance or immediately following:

   - Assessment of receptive and oral language in the area of semantics, syntax, morphology, language pragmatics
   - Administration of an informal reading inventory to check word attack skills and comprehension of material read orally and silently
   - If no essay is required, assessment of written language with attention to punctuation, capitalization, and spelling.
   - Assessment of auditory functioning, particularly for dichotic listening since much of the college student's information comes through the auditory channel.

Having assessed the qualifications of the candidate, a decision must be made to accept or reject, remembering that it is not friendly and loving to accept a student who is not qualified. The college or university must stand ready to do termination counseling when the need arises to shift to other areas of interest or other schools.

Once having accepted learning disabled students, there must be interdisciplinary commitment throughout the institution to support the program, whatever its design, and to educate staff through handbooks, presentations and workshops to the needs of these students and the type of accommodations to be made for them. As in mainstreaming at the lower educational levels, the faculty is the key. If they view these students as a burden, they cannot easily alter attitudes and techniques, or if they fail to understand the nature of learning disabilities, the program will never work.

The college or university must recognize that the educational program component and the psycho-social ones are equally important and that regular individual and group counseling support academic achievement. The goals of such counseling need to be to improve abilities in problem solving, goal setting, communication skills, and social skills. Other topics might be time management, passivity, assertiveness and aggression, values clarification, and sex roles.

Additionally, the students must be recognized as individuals, part of a heterogeneous group. They need to be able to work from strengths to weaknesses at all times and to constantly aim for independence. This can only be done through helping them not to avoid but to compensate. College is in many cases the last place that any accommodation will be made for the learning disabled person. For their own survival and success, they must learn how to adapt to circumstances as they find them. Through successfully working with the pain, self-esteem is built.

Finally, in the list of conceptual considerations is the need to see the student as part of the team. In the area of program design, the major consideration is the need for a systems model incorporating the institutional model with the student at the center of the map.

Personnel is critical and should include:

1. A learning disabilities specialist as coordinator who is highly trained, master's level person; Ed.D.; or Ph.D. with much practical experience

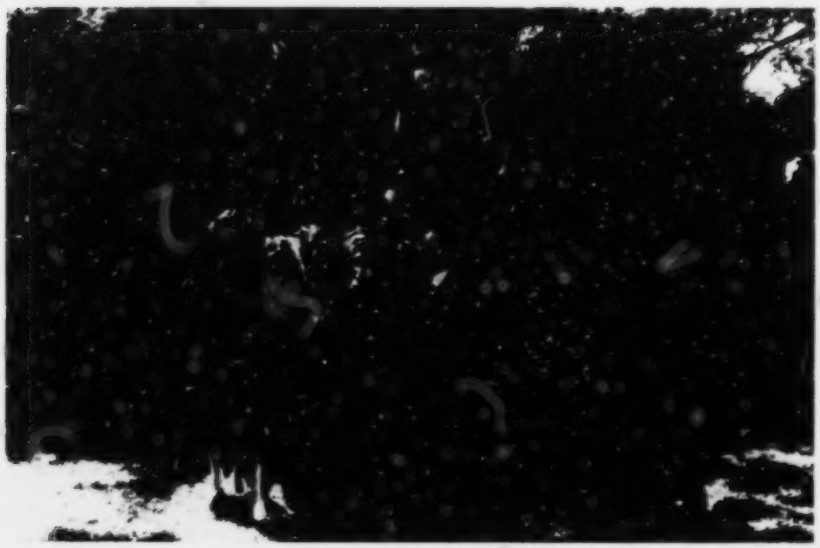
2. The learning disabled program staff should be at least master's degree level in special education with content certification
3. The faculty must possess a willingness to learn and to cooperate with the learning disabilities team.

Beyond this, many designs are possible and can be suited to the institution's present structure, but each successful design contains:

1. Required study skills courses with small group instruction 12 hours per week with no more than 12 students
2. Course support or tutoring in a small group or on a 1 to 1 basis provided by a subject matter specialist trained in learning disabilities for 2 to 3 hours per week.
3. Peer tutors as indicated. These are inexpensive and can break down authority barriers; however, they are usually not available when learning disabled students need them most, prior to exam time, so there are drawbacks.
4. Individual counseling sessions at least initially should be available on a weekly basis; group counseling also initially should be weekly; some colleges even provide parent support groups.
5. Special equipment services—books on tape; computers and word processors; incidentally, there are a number of guidelines and cautions about the effective use of these items as compensatory strategy mechanisms
6. Reduced course load
7. Attention must be given to readiness
8. A learning center or learning lab that is a pleasant place to go.

While not common to all successful designs, some programs are now employing a five week summer diagnostic preparatory program. In addition to many other things, this allows the students to try regular courses and to gather feedback from the instructors in these courses.

In operationalizing the components just outlined under conceptual concerns and program design, we must return to the regulations. First, there is the stipulation that no student may be excluded from any course of study solely on the basis of a handicap. Nothing is said, however, about spacing difficult courses or reordering courses, so, it should be possible for a student whose major disability is in reading comprehension and rate to take only one heavy reading course a semester. Computer courses teaching Cobol or Fortran may be counted as the language requirement for students with auditory perception problems. In some cases, practicum courses can precede the lecture courses. Some programs allow early registration and acquisition of texts, reading lists, and syllabuses so that learning disabled students may begin reading over the summer.



Hill Top's Class of 1985 celebrates graduation in traditional fashion.

The regulations also say that, "Modifications in degree or academic course requirements will be made to ensure that such requirements do not discriminate against qualified handicapped students." It is probably this statement that strikes the most fear among faculty members because they interpret this as meaning that academic standards are being lowered. This need not be the case. If this were true, it would defeat the purpose of equal educational opportunity for which the laws were enacted. The regulations state further that "Auxiliary aids must be permitted in the classroom when they are required to ensure full participation of the handicapped students." Tape recorders should pose no problems for the well-prepared faculty member when the student's presence is required nor should the provision of a note taker for the dysgraphic. In fact, these students usually do so well at auditory retention they sometimes catch the note takers in omissions. Those who are "lecture deaf" can have lectures typed and read to them.

The most initially cumbersome part of the regulation that we have found is the provision of alternate testing and evaluation methods for measuring student achievement when the student has impaired sensory, manual, or speaking skills. This takes significant faculty cooperation. A procedure for oral and untimed exams can usually be set up in the learning disabled service office, and a variety of personnel mobilized to administer andor monitor.

Other considerations, and in some ways the most important, are the regular employment of good pedagogical techniques and procedures by faculty members:

1. Typing all handout material for classes
2. Leaving more space between lines of printing
3. Making sure that directions are given orally and then in writing and that they are clear
4. Using manuscript rather than cursive writing on chalkboards
5. Making sure that chalkboards are cleaned regularly
6. Standing away from windows when lecturing

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Development of Support Program at a Large State University

Christine S. Walther, Olga Nadeau, Gladys Tucker

Approximately three and one-half years ago, a support group was organized for learning disabled (LD) students at the University of Utah. Help for Educational Learning Problems (HELP) was started by a student majoring in special education and the mother of four bright, learning disabled adolescents. Based upon her experiences with her children and the expertise she developed working with the Utah Association of Children and Adults with Learning Disabilities, she recognized that without a support system, even the brightest and most highly motivated LD student would flounder and often fail in a university of 25,000 students. It was evident these students needed moral support, skills training, appropriate academic counseling and program planning to adjust successfully to higher education. The support group was the first step toward addressing some of these concerns.

Once the HELP group was established, five LD students began meeting bi-weekly to provide support and receive instruction in areas such as assertiveness training, improving communication, organizational and social skills. University faculty, staff and community professionals volunteered time and expertise during skill building and open forum sessions.

Although the support proved effective, it was evident from the outset that additional services were needed. Most nationally recognized LD college models in 1981 were very specialized and, consequently, expensive. Excellent LD programs such as those at Southern Illinois University and Curry College required more funding support from either the institution or families of students than it was thought possible on Utah's campus.

University Development

A cooperative planning effort was undertaken by members of the support group, faculty members from the Department of Special Education, and the coordinator of the Center for Handicapped Student Services. Representatives from these areas developed a program that creatively dovetails with existing services and fosters the development of new service dimensions.

The development team has worked together for the past three years to create a learning environment that is supportive and innovative enough to enable capable LD students to achieve successfully on campus. The small group of five has grown to 75 students currently participating in the program.

A networking approach has been used to modify existing university services to meet individual student needs and develop new services where necessary. Initially all campus departments and agencies providing services and instruction to LD students were identified. Key faculty and staff were contacted and discussions held to determine existing services, program requirements, and explore the feasibility of policy and/or program modifications where appropriate.

Ongoing inservice sessions are held for departments providing developmental and remedial education and for all campus agencies providing ongoing support services. Liberal education programs and other academic departments have also participated in awareness sessions.

The following information is provided to help educate faculty and staff as well as gain their support and cooperation:

1. The legal rights and unique needs of LD students;
2. Practical strategies for modifying classroom instruction and evaluation procedures;
3. Suggestions for programmatic changes to provide appropriate accommodations to meet individual needs as they are identified;
4. Campus support services available to assist the student and the instructor in the development of accommodations;
5. Follow-up support to monitor program changes to determine effectiveness.

Center for Handicapped Student Services

During the past two years, the LD program has been coordinated through the Center for Handicapped Student Services. LD students are encouraged to become familiar with the services and to participate in the bi-weekly support group meetings.

Positive results and greater program visibility have increased the number of students participating in the services now available. An average of two to three new LD students per week are requesting assistance. Many of these requests are made by currently enrolled students who have been referred to the Center by instructors, staff or students who are aware of the characteristics of learning disabilities. High school students are making early contact with the office as well. These contacts are a result of the community presentations that are given throughout the year.

The services available through the Center include: 1) paraprofessional learning disabilities counselors; 2) referral to rehabilitation counselor; 3) educational, career and personal guidance; 4) admissions information/assistance; 5) orientation to campus/university policies and procedures; 6) registration information/assistance; 7) guaranteed first priority registration for taped textbook users; 8) academic tutoring and tutorial referral; 9) assistance to obtain readers; 10) liaison between instructors and student regarding classroom accommodations; 11) assistance with exam modifications; 12) equipment loan for academic use; 13) special assistance with testing and academic needs; 14) information/referral of on/off campus resources; 15) financial aid information/referral; 16) scholarship information; 17) housing information/referral; 18) newsletter; and 19) a study area.

Current Research

Research is underway to identify some of the characteristics and preparatory experiences academically and socially that enable LD students to succeed on campus. Preliminary data indicate that these students have strong family and peer support, high motivation, well-developed academic and career goals, and self-confidence.

Many of these students have been out of high school for several years and some have had unsuccessful college attempts. Generally they are a high functioning group. Many have received awards and

scholarships in areas of special talent or interest. Approximately half were not identified as learning disabled until adulthood because of satisfactory academic performance or poor special education services while they were enrolled in school.

Community Planning

The team has worked with school districts, community agencies, professional and parent groups throughout the state. Sessions are designed to acquaint participants with campus support services and provide information regarding the post-secondary preparation and planning needed to succeed in higher education.

Follow-up sessions have helped students determine earlier if university study is an appropriate goal and what skills need to be developed before high school graduation. Students are asked to request copies of diagnostic work completed within three years of graduation since verification of the learning disability is required for services on campus. They are also encouraged to learn as much as they can about their abilities and disabilities during high school so they clearly understand their needs and are aware of successful academic and compensatory strategies.

During these sessions admission procedures are explained. Entering students who do not fulfill the basic admissions guidelines can be admitted conditionally at the discretion of the admissions director and be placed in a guided study program to improve academic skills.

College survival strategies for LD students and their families are discussed. Students most successful in this program are those who understand their abilities and disabilities well and have a realistic plan of study.

College Survival: LD Student

1. Understand your problem areas and be prepared to discuss them when the situation demands it.
2. Your commitment to college must be deep and genuine. It must be a high priority in your life.
3. Start early to seek career counseling so your choice will be compatible with your strengths and you can plan how to reach long range goals.
4. Learn the services available at the university to help you with personal adjustment and academic problems. You may have to be assertive and persistent in establishing your own network of support.
5. Use your family as a support system. Some family members are readers, typists or sounding boards.
6. Because you often have difficulty with reading and writing, you may receive somewhat lower grades than other students but feel you know more. That is probably true but a fact you may have to face.
7. Approach professors before classes begin to find out what kind of tests are given (essay, multiple choice, etc.), how many papers are required and whether other options may be substituted for written assignments and tests. You can ask the grading criteria, the number and size of texts and the size of the class. Also ask if the profession has a teaching assistant who provides students with extra help.
8. Learn the univeristy system, e.g. adding and dropping classes, auditing classes, incompletes, grade point requirements, registration.
9. Begin school in the summer to learn the campus and the system.
10. Take fewer classes each quarter (6-9 cr. hrs.) and balance easy classes with more difficult ones. Plan on six or more years to finish.
11. Use compensatory techniques.
    - tape recorders
    - carbon papers so another student can duplicate his/her notes
    - taped textbooks or a reader
    - buy well underlined books
    - find a buddy in each class
    - buy your books in advance
    - audit a difficult class one quarter and register for it the next
    - locate available test files
    - take a library tour
    - plan in advance for difficult classes
    - keep classes in the same general area to start with
12. Don't miss classes.
13. Ask questions in class.
14. Sit in the front row.
15. Take a study skills class.
16. Deal with writing problems early as writing demands are heavy. Have papers edited and rewrite them. You may need a typist. Buy a *Bad Speller's Dictionary*. If you have a severe writing disability, you may have to seek tutoring or petition on the basis of a disability.
17. Have a written summary of your diagnostic history. It is helpful for those with a knowledge of learning disabilities when advising you.
18. Organize your time — Study Skills Classes teach this skill.
19. Allow lots of extra study time.
20. If tests make you anxious, test anxiety classes are available.
21. Be prepared for disbelief and lack of awareness by professors.

College Survival: Parents

1. Prepare your son/daughter for college during his/her school years. Many survival skills can be learned in the home, e.g. organizing time, self discipline, self-responsibility, assertiveness, persistence.
2. Talk to your son/daughter about his/her disability.
3. Make a point of learning what is required in college. Visit the campus and ask questions.
4. Be willing to make the extra investment of time and, if necessary, money.
5. Discourage your LD student from working at least for the first year.
6. LD students may need time to collapse. It may not be laziness but rather a response to stress.
7. Offer to tape textbooks, proofread papers, read assignments, underline texts, etc.
8. Be a support when you are needed *but* encourage self-responsibility from an early age. Always running interference can inhibit growing experiences.

Development of Support Programs

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9. Help your son/daughter plan realistic, achievable goals. If they must change or alter goals, be understanding.
10. Take a college class!

Conclusion

During the past three years approximately 15% of the LD students participating in this program have dropped out of school. This figure is significantly lower than the 40% attrition found among nonhandicapped students attending the university. Six of the LD students have graduated and three of these students are currently pursuing advanced degrees. One student will enter medical school this fall. While it may not meet the needs of all LD students interested in higher education, it appears to be an appropriate model for many.

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Myths and Realities

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7. Closing doors to classrooms
8. Minimizing outside noises in warm weather, where possible
9. Inviting learning disabled students to sit in the front of the room
10. Isolating critical reading materials for special projects in the library so that they are readily available
11. Giving time in class for questions and feedback
12. Sticking to dates given in the syllabus; learning disabled students can panic in the face of change
13. Avoiding undocumented assumptions about unusual behaviors
14. When a student asks a question you have just answered, avoid expressing annoyance
15. When a student doesn't get the information the first time, repeat it distinctly or ask if they need it in a different form
16. Be organized.

There are programs listed presently in every state except four. While they range from poor to outstanding, the trend is encouraging. It is hoped that more institutions will join the ranks of those providing programs for the learning disabled.

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November 9, 1985 The Hill Top Preparatory School

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Developmental Mathematics Program Proves Effective for LD Students

June Miller White, Ph.D.

(This paper was developed for presentation at the International Conference on Learning Disabilities. March 1984.)

BACKGROUND

Over the past thirteen years a developmental mathematics program for learning disabled adolescents has been developed, refined, and shown to be effective at Hill Top Preparatory School. The goal of this program is to enable learning disabled adolescents to enjoy success while acquiring the cognitive skills necessary for jobs and for college work. The curriculum is designed for both the non-college bound and for the college preparatory student. It is presently working very successfully with both males and females ranging in age from twelve to twenty years of age.

Drawing upon Piagetian and other developmental theories, the foundation of the program is two fold:

- instruction is based on the level at which the student is *presently* functioning rather than chronological age and
- movement of the student through the program is at a pace the *student* can successfully handle.

ESSENTIALS

The essential aspects of the program involve environment, process, and staff. The environment encompasses placement, grouping, and pacing. The process emphasizes sequential instruction and knowledge of each student's learning style. The staff recognizes the student's potential in mathematics and works at developing trust between instructor and learner.

ESSENTIALS: Environment

Appropriate Placement Students are placed at the point where the most elementary gap or problem exists. For example, if diagnostic work demonstrates the most elementary gap is regrouping in subtraction of whole numbers, the student is placed so that the knowledge missing in that gap can be acquired. Through analysis of a student's work on standardized tests as well as their intellectual potential and academic background, placement can be made in the appropriate course.

The Stanford Achievement Test is used to assess academic achievement, a full psychological report including subtest scores on the Wechsler Intelligence scale for Children is used to estimate intellectual potential, and transcripts from previous academic years are analyzed to determine previous successes or failures in mathematics. Through further diagnostic procedures within the classroom (teacher observations and specific skill tests) specific weaknesses are pinpointed and then strengthened.

Self-paced Program for Basic Computational Skill If students need work in the basics there is continual in-class diagnosis and students move through this basic skills part of the program as quickly as each individual can. The time for this varies from a few months to two years. Basic computational skills include addition, subtraction, multiplication and division of whole numbers, common fractions and decimal fractions, as well as work with percents and measurement.

Small Groups Adolescents needing work on basic computation receive individual instruction permitting them to progress at their own pace. This requires groups of six or less. Students ready for the traditional secondary courses are in slightly larger groups. Hill Top recommends eight as the maximum in these groups.

ESSENTIALS: Process

Sequential Instruction Instruction begins where the student is presently functioning. It does not assume knowledge the student may not have. Content is developed sequentially building upon a student's mastery of previous content. This assures each student the opportunity to be successful, rather than "setting him/her up" for failure. For many learning disabled stuents, previous failures in mathematics

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Developmental Math Program

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have often occurred because students lacked prerequisite skills, not because of any lack of mathematical aptitude or reasoning ability.

Emphasis on Process Instructional techniques take into account each student's learning style. For example, visual learners require that everything be written down. They learn less effectively through a lecture style. Some learners cannot take in information if the instructor is talking and writing at the same time. These learners require instructions that does both, but only one at a time. Instructors utilize each student's learning style and assist each student to develop an awareness of his her own style. The process becomes as important as the content.

ESSENTIALS: Staff

Recognition of Student's Potential By definition learning disabled students are average or above average in intelligence. Studies indicate learning disabled adolescents can reason as well as their normal learning peers but may have difficulty with specific language usage. Learning disabled students often have reading and language deficits, but mathematics requires word for word reading and specific words usually have only one meaning in mathematics. Math, therefore, is a subject in which learning disabled adolescents can be quite successful if prerequisite content has been mastered and present content is presented sequentially. In addition, mathematics is a secondary subject which will provide the background for any careers.

Development of Trust By the time a learning disabled student reaches adolescence, he/she has experienced much frustration. Some have learned to distrust educators since educators sometimes do not seem to know what to do with them. The Hill Top math program requires teachers who like students and who like mathematics, who understand adolescence and learning disabilities, and who are trained in mathematics.

CURRICULUM COMPONENTS

The curriculum has four components, some of which overlap. The first component is mastery of fundamentals. The second is acquisition of traditional secondary content. The third is knowledge of computer science, and the fourth is college level work. Students take at least one mathematics course every year; some request a second mathematics course as an elective. Each course meets five times weekly and grades are given on report cards.

Fundamentals Mastery of fundamentals is required before students begin work in other areas. This component includes both basic computations and basic decision making skills. Any student entering the program who tests below a 7.0 grade equivalency on the Stanford Achievement Test, 7th Edition, and who is 12-14 years old is placed in a course called Basic Skills. If students are functioning below 8.0 on the Stanford Achievement Test and are 15-18 years old, they work on fundamental calculations in a course called Basic Review.

Both courses review the four basic operations with whole numbers, common fractions, and decimal fractions. Both also include percents, measurement, and one or two step word problems. The Brueckner Inventory Tests (McGraw-Hill) are used to determine individual strengths and weaknesses in basic computations. Teacher observation contributes additional information regarding each student's style of learning. Outside assignments are not given in Basic Skills. An adolescent needing work in basic computations needs to be supervised and mistakes corrected immediately. A student doing several problems incorrectly at home has reinforced the wrong concept. This actually slows his/her progress.

If multiplication facts have not yet been memorized, students make a chart (or a chart is taped on the top of the desk) and check facts for themselves. This results in visual reinforcement, more independence for the student, and an emphasis on process.

Students are individually instructed in these courses and complete the objectives in as little as a semester or as much as two years. The two courses, Basic Skills and Basic Review, use different texts, but both have the same primary goal: successful performance of basic calculations.

The other area in this component involves development of basic decision making skills. The student learns to sequence several steps in word problems, to interpret data, and to estimate answers. He/She learns to self-ask and self-answer such questions as:

- How do I get started?
- What do I do first?
- What do I do second?
- What information is relevant?
- What information is irrelevant?
- What additional information is needed?
- What question is the problem really asking?
- What do I need to know to find the answer?
- What would I estimate the answer to be?
- Did I answer the question?
- Is my answer in the right form?

In this course called Consumer Mathematics, the students learn appropriate behavior with peers and teachers through group instruction. Development of effective organization of work, strong study skills, and preparation of acceptable outside assignments are emphasized.

Traditional Secondary Content Once students have mastered both the fundamental computations and the decision making skills they are ready to begin work in the second component, traditional secondary content. A student's functioning level must be above 8.5 to begin work in Pre-Algebra. After topics in Pre-Algebra are mastered, the program includes Elementary Algebra, Geometry, Intermediate Algebra, and Trigonometry. Each course is a prerequisite for the next and all require a functioning level of 9.0 or higher. A prerequisite is satisfied only with a grade of "C" or higher. All courses are completed in two semesters with the exception of Elementary Algebra which can require two, three, or four semesters. All are taught in groups and all have outside assignments.

Computer Science The third component is computer science. It overlaps the second because students begin work with computers in the Pre-Algebra class, where they work with computers one day each week. After passing Pre-Algebra students may then select an introductory computer science course using BASIC as an elective. They also may continue with an advanced computer science course in BASIC or in COBOL. Computers are extremely helpful to learning disabled for many reasons.

- Computers expect mistakes. Errors are acceptable. Students learn to correct their work and try alternatives.
- Computers are predictable. The sequence is defined. One step at a time is required.

- Computers individualize and are patient.
- Computers require specificity. One word has one meaning to the computer.
- Computers encourage students to be logical and analytical, to identify and isolate each step in the process.
- Computers support a metacognitive style of instruction in which students learn how to learn.

College Level Work Some students complete the traditional secondary mathematics and are ready for the fourth component, college level work. These students take courses individually instructed on the campus or travel for group instruction to nearby universities such as Villanova University, which is only one mile away. Students who enroll for a college course off campus have schedules which permit them time each day to confer with a mathematics teacher at Hill Top. Often the transition to college level work requires much assistance in the early weeks and less as the students become more confident in their performance.

STANDARDIZED EVALUATIONS

Progress is formally evaluated by standardized tests. Once each year, each student takes the full battery of the Stanford Achievement Tests. The subtests may come from different levels depending upon the student's performance the previous year. The testing, as the placement, is based on functioning level. If a student scores above the range for a particular level, he/she is tested on the next level in that subtest. All juniors take the Preliminary Scholastic Aptitude Test (PSAT) and all seniors take the Scholastic Aptitude Test (SAT). Scores are discussed with each student individually. In addition, each student must score at ninth grade level or above on the Stanford Test of Academic Skills (TASK) before graduation. Over seventy percent of Hill Top graduates go to college and many choose math related fields.

Mean scores on the SAT for each graduating class, with one exception, have been over the 40th percentile for each year since 1979. These same classes on the TASK had median scores well over the 60th percentile for twelfth grade norms their senior year. It should be noted that 20-50 percent of these same graduating classes scored fifth grade or below on math computation when admitted to the program. Students are in the program an average of three years.

CONCLUSION

Many learning disabled adolescents are bright, but carry with them a history of failure and dislike for mathematics. These students are discouraged: "I've done this a million times." These students are frustrated: "I don't WANT to do this." A well-trained teacher-therapist will translate this to mean: "I don't understand and I CAN'T do this." A good teacher will distinguish between aptitude and a student's past history in mathematics. A frustrated adolescent cannot make that distinction. He/She only thinks: "I had trouble before. I'll have trouble again."

The development of a trust relationship between student and teacher allows the student to make an effort once again. The Hill Top program encourages this trust by being honest with the student. The program says to the student: This is where you are, this is what you already know, and this is what needs to be done. The program is content AND process oriented. Student-centered, it focuses on the needs of each individual student. There are no gimmicks and no watering down but the pace is at the student's level. There is no magic text or simple technique that makes everything work. There IS an approach that views each student as important and math as a sequential subject in which learning disabled students CAN succeed.

All Hill Top math teachers are math-certified except for those who teach only basic courses in which case they are certified in special education only. Use of math certified instructors recognizes the potential each student has for success in mathematics and the powerful tool math will be for success after secondary school.

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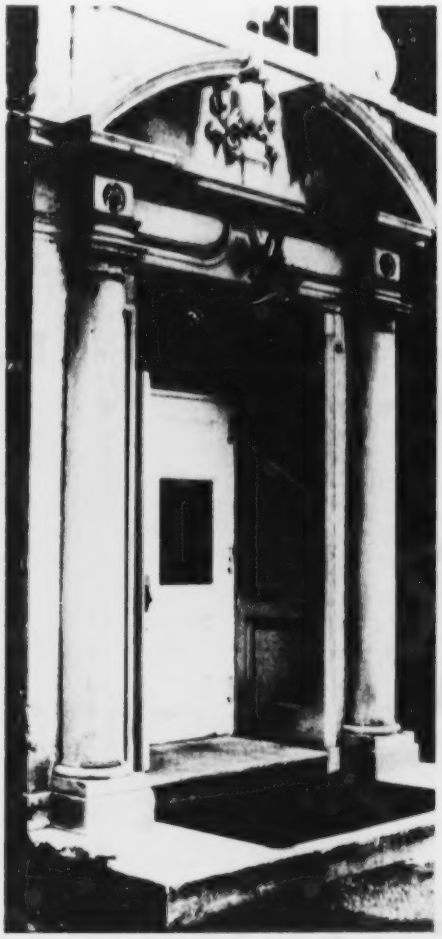

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Competitive Sports Program Offers Arena for Success for LD Athletes

Richard Nocella, M.Ed. and Elissa L. Fisher, Ed.M

(This article was developed by Mr. Nocella with Mrs. Fisher for a presentation at the ACLD International Conference, February 1984. Because of the birth of his daughter at that time, he was unable to attend and this paper was delivered by Mrs. Fisher)

In 1976, The Hill Top Preparatory School purchased a 25 acre campus which included a large gymnasium, three playing fields, tennis courts and an outdoor swimming pool. Since the school's inception in 1971, the staff has been busy desensitizing a number of the students to their fear of sports through a carefully planned physical education program three periods a week. By 1976, many students were eager and ready to participate in a competitive sports program. Over the next two years, the sports program consisted of the following: 55-60% of the student body, both boys and girls, were directly involved in sports activities; soccer, basketball, floor hockey, and softball teams were formed and Hill Top became part of a private special school league. Approximately four years ago it became apparent that our teams were capable of playing more competitive ones. A new schedule was put together where we played some special schools and some private academic ones. The fall of 1983, Hill Top spearheaded the formation of a new league in which the majority of members are small, private, academic schools in the Greater Philadelphia area. Membership in this new league is something our students have earned through hard work, careful skill development and good coaching. They are proof that learning disabled students can not only profit significantly from participation in competitive sports, but they can contribute meaningfully.

The focus of this article will be on one sport— basketball — because it is the most difficult one for our students, and consideration of it, therefore, gives the most comprehensive picture of all aspects of athletics for the learning disabled adolescent.

The difficulties encountered by the learning disabled adolescent in playing basketball are myriad. An analysis of the task reveals the following: the player is expected to throw a round ball into a modified net cylinder mounted on a rectangular backboard which is located in a different plane. The backboard may be clear, see-through, or multicolored opaque. To accomplish the task, the player must shoot from different angles while experiencing visual, auditory and physical interference. The player must keep in mind rules, plays, awareness of his own body as it exists in time and space, and ball handling skills, while anticipating the other players' actions, and jumping and running up and down a court. On top of this, the player is expected to respond appropriately to whistles, buzzers, referees, coaches, overenthusiastic or overly critical parents, friends, cheerleaders, and opposing team members and spectators.

Now, overlay the task analysis expectations with learning disabilities that manifest themselves, for example, in inadequacies in eye-hand coordination, spatial relations, auditory perception, sequential thinking, and processing. Then consider the complications produced by organicity, perseveration, poor self-image, fear of failure and success, distractibility, and poor social judgement.

Anyone appreciating the dimensions of the situation might ask why any learning disabled adolescent would want to go out for basketball — let alone why anyone would want to coach such a team. The answers to this question lie in the many far-reaching benefits provided to the student by involvement in carefully designed and executed sports activities. These benefits break down into four basic categories: physical, social, emotional, and academic.

Although practice and playing time are limited to three afterschool sessions a week, the players exhibit significantly increased physical stamina, improved coordination, growth in and development of physical skills, i.e. agility, speed, balance and body awareness. As the season progresses, the players learn to pace themselves and as their physical condition improves, they see the fatigue factor overcome.

Emotionally, we find that egocentricity changes into other centeredness. Self-control and self-image become positive and more mature. An ability to read other's feelings and values develops. Reality testing is more accurate and more readily accepted particularly as it relates to authority. Players quickly learn that there is no court of appeal beyond the referee. If the ref calls a foul, you fouled. Yelling "I didn't hit him" doesn't change things. Declaring that something isn't fair doesn't always change things either. The real world comes into clearer perspective. At the same time, the student athletes learn to be appropriately aggressive — to risk — to take a chance — to try.

The work athletically coupled with the work in the group therapy required of all Hill Top students builds an unparallaled knowledge of self and one's strengths and weaknesses. In a number of games, the edge that Hill Top Prep seems to have over other teams is emotional strength and cohesiveness. The players develop a congruency that supports them well in adulthood. Great emphasis is placed on thinking, saying and doing the same thing. Through this, a values structure develops along with a sense of integrity and commitment that do not just occur but result from hard work and careful thought. Last year, one of our point guards preferred to go skiing with old friends from another school rather than play in a scheduled game and lied to the coach about having to attend a family dinner. As the student's group leader reached for the phone to call the boy's father to see if the time of the dinner could be changed, the boy confessed what he had done. After explaining to the coach, the director, and on the phone to his father the nature of the circumstances, he was sent to each classroom to summon his fellow players for an emergency team meeting. When they found out what he had done, the team members shared their feelings forcefully with him about his dishonesty and his letting the team down. In the midst of the meeting, he tried to quit the team. The players announced that it wasn't his choice. They would vote to see if he could stay. The vote was in his favor because, obviously, he needed more work.

Socially, through basketball and other team sports, students learn much about healthy competition and sportsmanship.

For the learning disabled student, there are other equally important learnings. Since learning disabled students frequently do not learn from social experiences in the way that most people do, every effort is made to improve their metacognition in regard to the sports situations in which they find themselves. They are taught to see failures, in this case losses, as growth

crises. Failures allow you to look at what you can do better. Peer pressure is used positively. Team members are let in on what kind of support each player needs and also on what things interfere with a fellow member playing well. One of our players, for example, has learned not to call a certain teammate's name during a game because that player turns his head toward the call and repeatedly gets hit in the face with the ball. You learn that when the coach says change your clothes and go to the bus, you don't do it in the middle of the playing floor, as one of our young junior varsity players started to do. Team spirit builds quickly because you belong and you belong in a big way. Disabled players have to help each other with a greater frequency and intensity than non-handicapped players if wins are to be a possibility.

Other social benefits come from visits to other campuses as respected competitors. Emphasis is placed on self-presentation. Our players wear suits and ties for off-campus visits. We impress upon them that they are representatives of the school, and, therefore, carry great responsibility. Instruction is given in how to handle oneself if there are any incidents with another team or spectators; the guideline: "Let the coach deal with it."

Further special benefits accrue from neat uniforms and warm-ups, sports awards, and the banquet with a name speaker and publicity. The pride they develop in a job well done helps them view life more positively. It begins to look manageable if they take the initiative rather than just react.

Academically, there are many carryover benefits. First, there is the matter of discipline. The discipline that is achieved through repetition and practice over a long period of time on the court carries into the classroom where the learning disabled adolescent must become accustomed to over-learning. Secondly, the basketball court offers an opportunity for the learning disabled student to work out physically the same thinking disorders that plague him/her in the classroom. New learnings can be taken back to the classroom and practiced in an academic format. A third benefit is achieved through tying together the eligibility to participate in basketball with responsible academic performance. To accomplish this, eligibility depends on all homework and classwork being done on time, behavior being acceptable, and the student taking the responsibility for using the teaching resources available to him/her. It is not tied to achieving a certain grade, yet Hill Top Prep has the strictest eligibility rule in the league. Fourth, because the best learning for the learning disabled is sequential and consequential, the basketball court provides an exceptional opportunity for the student to see that a certain sequence, if followed correctly in regard to a play or a skill, results in success. Such information transfers to the algebra or geometry classroom where the teacher requires problems or theorems to be written in a precise sequence.

A Hill Top soccer player (in the dark shorts) sets up a play leading to a 3-2 win. The soccer team finished the regular season with a 12-1 record and first place in the TriCounty Independent School League.

Another academic benefit arises in classroom behavior. Because the player has had numerous concrete opportunities to see how his performance on the court affects that of others, he is better able to see how his classroom behavior affects the learning of others. This enhances the academic environment for all. Finally, the players learn ways to compensate for their disabilities on the court which gives them the confidence to develop and depend on compensatory skills in the classroom.

A benefit that covers all four categories is the improvement that comes about in processing problems and learning to adapt to change. Although difficult, thinking issues through and a calm approach to changes in the environment and the game plan become part of the players' regular repertoire.

Now, what have we learned about specific techniques and practices?

Practice needs to be conducted in a very structured manner. The first 40 minutes of practice are devoted to fundamentals like ball handling skills, lay-ups, footwork, foul shots, pivoting, etc. The same drills are run over and over. Much work is done with the time clock so that the players become better at judging elapsed time. They run a lay-up drill for 2 minutes. Then they run a certain offense for 2 minutes. The ball is held for 30 seconds. Another time drill has the player taking one shot every 30 seconds.

Still another drill requires six people working at once to complete the following — a caught bounce pass, a pivot on the inside foot straight up into the basket, a caught rebound pass, squaring off at the foul line and shooting.

Since pivoting of any kind is very difficult for learning disabled students because they are frequently off balance and tend to turn only across body mid-line with their dominant hand, much work is done on the reverse pivot. The drills are exhausting, but the improvement in the players is astounding.

Suicides (wind sprints) are used to build stamina. Because our students practice less since they cannot sacrifice academics and the staff has multiple responsibilities, they must work harder to build up their stamina when they do practice. If we didn't push this, they would never be able to play a fourth quarter.

Following the fundamental session, the next task in practice is the play session. This again is structured very carefully.

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Sports Program

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Every presentation is segmented — the skill first, and then the play. Offensive and defensive patterns are diagrammed on a chalkboard first in the classroom. Once understanding is under control, the players are taken to the court and walked and talked through it six or seven times.

Next, the players run through the play without defense. They run it at both ends of the court. When that is under control, the play is run live against a defense.

It is important to add that directions are given verbally and succinctly coupled with diagrams. In addition, the players are expected to study their play books off court. It is a fallacy that learning disabled players cannot learn technique and plays. They *can* — it just takes segmenting, pacing, and lots of repetition.

The skills worked on during the basketball season are for many reinforced and extended at Villanova University's Summer Basketball Camp which is directed by Rollie Massimino and where Hill Top's coach is a summer coach.

In regard to motivational and organizational procedures, we have found the following to be helpful:

1) The team needs to meet frequently with the coach for decision making, discussion, discipline, commitment building, and strategy work. At Hill Top, it amounts almost to a group therapy session.

2) The coach needs to be directly involved in academic performance matters; i.e. the eligibility sheet.

3) The coach must be very active in practice and on the sidelines during games. The coach's persona must loom larger than any distractions.

4) Special techniques for each team need to be devised for helping students process what they see with what they know.

5) Agreed upon signals must also be designed for individual students to "stop the action" when perseverative behaviors occur.

6) Practices initially need to be conducted in a very quiet manner, some drills with no talking and then build them up to tolerate noise.

7) "Blocking out" distractions must be taught. To do this, sometimes requires primitive methods — yelling; a jab with the coach's always present pen; a pinch in the ribs when the player loses concentration in a huddle; a crack with the clipboard when eye contact is lost.

8) Excuses are not accepted — practice until you can do it. If you need to make a compensation, do it. Never do for them what they can learn to do themselves.

9) Emphasis should be placed on the importance of being a team member. Points are given for assists in practice — not made baskets. While the Philadelphia Inquirer publishes our high-scorer information, the in-school emphasis is on best defensive player and leading rebounder. This places the focus where it needs to be.

10) The school administration and the coach need to be in agreement that the basketball program is an excellent place to teach life planning, scheduling one's time and commitment.

11) Finally, I can add this because Mr. Nocella isn't here and, therefore, will not be embarrassed, we have been fortunate to have a coach who is a tough Italian, organized, positively aggressive, competent, dependable, an able communicator, an excellent role model, one who exudes confidence, and one who loves kids!

Our goal — to develop players who, despite their learning disabilities, can adapt well to any environment in which they find themselves as competent young people. The beauty of it is if athletics for the learning disabled are well executed, they can be successful, too. Last year Hill Top's basketball team repeated as league champions in regular season play and as winners in the post season tournament. In addition, in the first year of a fledgling wrestling program, a Hill Top student was named outstanding wrestler in a major private school tournament, and the softball team finished with an 11-3 record. And, finally, the 1985-86 sports program has been launched by the soccer team with an 11-1 record in regular season play, and a first place finish in league competition. □

Richard Nocella is athletic director and director of the Transitional College Program at The Hill Top Preparatory School. He also chairs the social studies department.

Hill Top starts the second quarter in last season's basketball tournament with a 15-2 lead. They went on to win that game, capturing first place in both the post season tournament and the regular season for the second year in a row.

Positive Personality Qualities In Successful Dyslexic Adults

Dennis L. Hogenson, Ed.D., Ph.D.

This article is a condensed version of a presentation at the 29th Annual Conference of The Orton Society, November 1978. It is reprinted here with the author's permission.

Most of those whose professional life involves considerable contact with dyslexic children and adolescents are well aware of the educational and psychological handicaps created by dyslexia. Many have heard of the eminent scholars, artists, scientists and others who surmounted their problems with dyslexia but fewer, perhaps, are aware of the criminals, assassins, and psychopaths who were also dyslexic. While most dyslexics achieve neither fame nor notoriety, some clearly do better than others. It is the purpose of this brief article to suggest that certain factors are the determinants in the outcome.

I have long believed that there are three major support systems in a child's life. These are the dynamics associated with a loving and supportive family; acceptance and respect from peers; and school success. Through my school and clinical practice, I have learned that most children do well in terms of their general mental health and positive self-esteem if two of the three support systems are present. A child can fail in school or have a chaotic family life or be ignored by his peers, but he can still attain mental growth and health if only one of these conditions exists. At least two of the support systems must exert the necessary positive influence on his life.

As the child becomes an adolescent, two additional support systems are necessary. First, it becomes vitally important to him to relate to another person romantically and, second, he must be able to find and hold a job. These support systems in adolescence help to assure the emerging adult that he may be able to meet future needs without the help of others. Most adolescents probably need three of the five support systems to be working for them if all is to go well.

While I believe that the kinds of support I have suggested, necessarily in a very general and overly simplified manner, explain why most dyslexic children manage to grow into responsible adults, I think it is also important to examine the qualities that combine to create the highly successful dyslexic adult. The extensive human personality factor analysis studies of R.B. Cattell provide us with a useful set of constructs as a basis for discussion of significant adult success in dyslexic persons. The successful adult dyslexic has developed seven distinctly different but positive personality qualities.

Warmth The ability to relate to others in a comfortable and secure interpersonal style seems to be the sine qua non of successful social adjustment. This implies a sense of empathy and respect for the needs of others combined with the ability to enjoy social experiences. While warmth may most easily be learned through love and acceptance in childhood, it can be learned in adolescence or adulthood through conscious effort and hard work.

Intelligence The second most important variable seems to be general intelligence. The successful dyslexic adults I have known or read about all seem to have been intellectually talented and frequently also artistically or mechanically creative.

Ego Strength This is a strong sense of one's personal identity with an absence of mental health problems. Ego strength implies identity, confidence, risk-taking ability, and the capacity to enjoy life and have fun.

Dominance We value the ability to direct the activity of others and leadership that is shared, fair, and productive. Dominance that is neurotic is based on control, manipulation and weakness. The successful dyslexic adult, however, can have a dominant role without alienating his peers. Dominance increases recognition and achievement, two pathways to success.

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We need to receive your response by January 15 in order to have our mailing list complete for the March issue. That issue will feature articles transcribed from the Hill Top Conference on Socialization Disorders of Learning Disabled Adolescents.

Our goals for **Spectrum** are to share information and generate dialogue. Your responses to date confirm that our goals are being met. Thanks so much!

Development of Math Program

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The Hill Top math program attempts to deal with the true disability and not with the presumed deficiencies. Lewis Carroll, author of *Alice in Wonderland* wrote:

"'What's one and one and one and one and one and one and one and one and one and one?' 'I don't know,' said Alice, 'I lost count.' 'She can't do addition,' said the Red Queen."

The wrong conclusions are also made about our learning disabled. Learning disabled adolescents can do addition as well as traditional secondary mathematics. Educators need to program effectively to enable learning disabled adolescents to acquire the skills missing in their previous work and then acquire the skills required in their future work.

Note: If further information is required regarding testing levels, texts used, or course objectives, please write to Hill Top. A $10 contribution will help cover printing and mailing costs.

Spectrum Editor, June White, is also chair of the mathematics department of St. Petersburg Junior College, Clearwater, Florida. □

Successful Dyslexic Adults

continued from page 7

Impulsivity There must be impulse controls that work. The dyslexic child and adolescent often react to life without adequate thought. To be successful, it is important for us to learn to inhibit our impulses and to think out and learn from past behavior. Impulses often stem from unconscious sources, but deliberate behavior stems from the rational and conscious part of the mind. The successful adult has learned to think first and act second.

Group Conformity It is important to develop the ability to be a good team member, a responsible person who values the rights of others, and one who can resist the need to rebel. By conforming to group values and expectations, we avoid problems that needlessly absorb time and energy.

Boldness Boldness is assertive, risk-taking behavior without emotional constriction or inhibition. Because much of life involves making decisions and venturing into new opportunities, success in life requires an amount of boldness and forward movement. This must be combined, however, with enough restraint and judgement to avoid failure.

I have outlined the qualities of personality that I have found in successful dyslexic adults. Obviously, this is not an all-inclusive list but, on the basis of the factor analysis studies of R.B. Cattell, I believe that I have provided a framework for discussion of the important qualities. There seems little opportunity in today's society for adult success for a dyslexic who lacks warmth, good intelligence, ego strength, dominance, impulse controls, the ability to conform, and the necessary boldness. Unfortunately, a learning disability in childhood can lead to school and peer group experiences which inhibit the development of the qualities I have identified.

Dennis Hogenson is a licensed consulting psychologist associated with the Hogenson Psychological Laboratory in Golden Valley, Minnesota. □

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Learning Disabilities in Adolescents Generate Socialization Disorders

Betty Osman, Ph.D.

(This article was adapted from a presentation made during the Hill Top Conference on Socialization Disorders of Learning Disabled Adolescents, November 9, 1985.)

In the past two decades since learning disabilities have been recognized, the prevailing view has been that they are self-limiting, primarily affecting a person's ability to acquire the basic skills taught in school. In light of this, it is not surprising that the focus of both diagnosis and treatment has been, and continues to be, almost exclusively academic, particularly for the older student. A look at IEP's, resource programs, and even college support systems around the country, clearly indicates this focus and the lack of attention paid to the social/emotional aspects of learning disabilities. This is not to minimize the significance of academic remediation. It is important, but in my opinion, it is not enough.

In my work, I hear young people complain more about bad dreams, arguments with parents, and no one to play with than about poor grades in school. For many, the most painful part of the learning disability is isolation from the peer group and alienation from families. It makes sense—a teenager can always carry a calculator to help remember the multiplication tables, and use a word processor to assist with written assignments, but there is no similar technology to help with a social activity at school, a dinner with the family, or a date.

We live in a social world, first and foremost. It is not only how we read and write that matters in life, but how we relate to others. In that context, the "LD" that signifies a Learning Disability should, more appropriately, stand for Living Disability since all facets of a young person's life are likely to be affected. The term "learning disability" is too narrow to describe the full extent of the problems many experience.

Although the social aspects of learning disabilities are largely neglected in educational practice, there has been an increasing body of research in the past five to ten years. It has been well documented that young people growing up with learning disabilities frequently lack social competence and are disproportionately rejected by their peers. They face more rejection from teachers and parents as well. According to Deshler et al (1980) data collected from LD and non LD youths, their parents and teachers revealed a number of significant differences between the social adjustment of LD and non-handicapped students. Adolescents with learning disabilities seem to participate less in school and extracurricular activities, and also report less satisfaction from contacts with peers.

Most of the studies in this area, though, attribute the interpersonal problems of adolescents to the failure and frustration they experience in the classroom and the resulting lack of self-esteem. In other words, it is assumed that as young children, they had the same social development and confidence as others; then as their self-image wanes under increasing academic pressure, socialization does too.

Rather than reflecting negative educational experiences, I feel that the social problems many experience are an intrinsic part of the learning disability itself, evident long before the child enters school, perhaps even in the pre-school years. In a study of social competence of pre-school children at risk for learning, I found that both teacher and peer ratings indicated that these children were lower in social skills and less accepted by their peers, even at that age, than youngsters not at risk. Yet the majority of preschool screening and assessment focuses almost entirely on perceptual and cognitive development. Very few instruments evaluate social skills as an indication of possible learning problems.

Behavioral and social aspects are at least as important as reading skills in the early years of school. I've rarely heard a kindergarten teacher complain about the academic lags of a five year old. They are usually more concerned that "Johnny can't sit still,"..."is unable to communicate with peers,"..."doesn't follow directions," or "is a loner." These issues are neither assessed nor adequately addressed in education today.

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A Neuropsychologist's View

Organic Dysfunction Linked to LD Disrupts Normal Social Development

Marilyn Bergman, Ph.D.

(This paper was developed for presentation at the Hill Top Conference on Socialization Disorders of Learning Disabled Adolescents, November 9, 1985.)

Adolescence is, by definition, a period of transition, with pervasive, impactful changes. Not only is there the obvious physical maturation, sexual development and growth, but cognitive maturation is apparent in the shift from thinking in absolutes to semiabstract, and finally to formal operations. Comcommitantly the emerging adult has need to become autonomous and independent, and struggles with a variety of novel, complex social circumstances. Emotionally, demands are many fold (both from within and without), and growth relies on the foundation laid in earlier stages of development.

For the learning disabled child, adolescence can be even more difficult. The learning disabled youth often reaches adolescence with fewer skills and resources with which to cope. In addition to limited academic capabilities and a paucity of learned information, he/she may have major gaps in social skills and, unaware, act inappropriately, impulsively, and immaturely. As the demands change, the youth's specific (possibly concealed) learning disability may manifest in limited adaptive capacity in new arenas, tripping social faux pas, rejections and perplexity; generating emotional hurts; and impeding the development of self-confidence. The youth may be limited in the ability to foresee the consequences of actions, to appreciate social sequences or subtleties, to accurately perceive facial expressions and reactions, to incorporate social feedback information, or to be sensitive to the impact of their words. The learning disabled teen is probably still plagued, to varying extents, by the egocentricity and behavioral symptoms considered characteristic of many younger learning disabled, but now these are even less acceptable: hyperactivity, distractibility, impulsiveness, uncoordination, swift mood swings, stubbornness, unpredictability, attention and memory difficulties, cognitive, sensory and motor deficits. Strategies for face saving may be clumsy and not adaptive. Most children do not simply "grow out of it" but rather the deficits persist for many teens, with implications for adjustment not only in adolescence but also in adulthood. While some learning disabled youths come to function adequately and become reasonably well adjusted, many others have great problems adjusting not only in school, but also to expectations of parents and teachers, and to expectations of peers. Lack of peer group acceptance and a handicapped social life, can be very painful and may generate acting-out and anti-social bahaviors. With extrinsic pressure and failure experiences, motivation and self-esteem may plummet and discouragement and depression is common. In short, a learning disability has potentially pervasive impact on all facets of an individual's life, throughout the life span, and this presents a particular challenge to the learning disabled child who is struggling into young adulthood.

The learning disabled youth not only learns in various idiosyncratic ways in the classroom (according to the individual profile of strengths and weaknesses), but also acquires socialization skills with similar idiosyncracy. In considering the adolescent's social difficulties, one must take into account the environmental demands being made. In middle school years, the age-appropriate expectations is for the student to learn to organize learning; in high school the student is expected to learn to read, organize, and learn with increasing independence; and in college the expectation is that the student will be managing on his/her own. These academic expectations are paralleled by the social and emotional expectations (from the teenager as well as from adults) that independence and social self-reliance will be evolving, and that the adolescent will be able to manage increasingly complex and novel situations with lessened external support, guidance or structure.

Learning Disabilities and Organic Dysfunction

In recent years neuropsychologists, who are principally concerned with the study of behavior as a brain-related phenomena, have pursued the apparent link between organicity and learning disabilities. Increasingly persuasive evidence has accumulated linking disabilities with organic dysfunction.

The main body of accumulated neuropsychological knowledge, initially gleaned from the study of head injured adults, has been applied to children and to developing an understanding of the learning disabled population. The neuropsychological enterprise is an inferential undertaking requiring samplings of behavior, comparisons with normal and brain-injured productions, and interpretation with appreciation of brain functioning, a medical differential, and psychological awareness.

When dealing with developmental dysfunction in children, the level of inference becomes more tenuous, and greater caution and clinical acumen is essential because the processes underlying child developmental dysfunction are different in many respects from disorders in adults with mature nervous systems. Many disorders found in adults are usually not pertinent to children (e.g., dementia, alcoholism, cerebral vascular disease), and many childhood processes are not found in adults in the same fashion (although residuals may remain, for example, for attention deficit disorder, autism, mental retardation). Even for similar insults (e.g. head trauma), implications and prognoses differ in a developing system from a mature individual because the child has the benefit of the developmental process and change to aid in the recovery from acquired lesions. Typically, persisting focal deficits are most apparent only for most severely damaged young children.

The observation of little clear relationship between the fact of an anatomic lesion in the brain and the development of the behavioral disturbances has led to the speculation that the development of symptoms of brain injury in children may be due less to the fact of a brain lesion than to the possibility that the lesion disorganizes the physiology of the remaining intact brain. It is not until the child reaches age 10 or thereabouts that the potential for lateralized and focal lesions becomes greater, and the implications for treatment become more like those for an adult. Certainly lesions which occur prior to skill development have different consequences than lesions which occur following skill acquisition. The longer a child has an intact brain, the better quality learning and development will occur; with later insult, acquired specific skills are vulnerable to disruption.

Despite the many problems inherent in drawing neuropsychological inferences in children, extrapolation of neuropsychological assumptions and principles from classical adult-referenced neuropsychology to the study of children and adolescents has proven productive, particularly enhancing our understanding of learning disabilities. This systematic approach has distinguished neuropsychological patterns or profiles in children and adolescents which appear to parallel adult dysfunctions. In interpretation for an

individual youth, however, appropriate caution should be exercised in drawing inferences, making recommendations and making predictions.

Overview of Brain Functions

Before addressing the pertinence of a neuropsychology to the issue of socialization disorders of learning disabled adolescents, a brief overview of brain functions seems essential. The frontal region subserves motor, motor planning and sequencing, Broca's language area, grip strength, and conceptual skills requiring flexibility and planning. The temporal lobe subserves the primary auditory region and adjacent language associations with language, upper quadrant visual fields, and memory. The parietal region subserves sensory functions (which parallel the motor strip), refined integrative tactile discriminations, kinesthesis, constructional praxis, and lower quadrant visual fields. Finally, the occipital region is involved in visual perception.

The importance of the subcortex (including the reticular activating system and the limbic structures) for the regulation of arousal and activation, emotionality, and "attentional tone" must not be overlooked, even though specific skills are localized in the evolutionarily more recent cortical level. Cytoarchitechturally, the subcortex has most agreeable connections to the frontal lobes, and for many learning disabled youngsters this network is undoubtedly involved in poor modulation of behavior, which translates into poor tolerance of the standard classroom, distractibility, hyperactivity, hurried disorganization, difficulty with independent work, social disinhibition, poorly modulated interpersonal behavior, and uninhibited (sometimes irrelevant) talkativeness. Memory dysfunction often accompanies these attentional problems, and in adolescence the demands on memory increase. The expectation is that the teenager will be able to draw on a fund of basic information and previously acquired skills, with instantaneous, almost automatic, and ideally effortless retrieval. Such a demand is often unattainable for an adolescent with an attention deficit disorder, and the stress and frustration may be huge if appropriate intervention is not effected. While maturation may benefit some of these youngsters, very often persistent behavioral difficulties are viewed as even less acceptable with increasing age.

Another way of viewing brain functioning is the anterior-posterior model, in which the posterior regions (temporal-parietal-occipital) are considered for the perception and analysis of stimuli within particular modes (tactile, visual, auditory, kinesthetic), with the processing, encoding, and integration of this information, and with storage of this information. The anterior (frontal) regions monitor the executive functions of planning and programming, regulation of behavior (inhibition and disinhibition), and the reflection and cognitive flexibility needed for effective reasoning and decision making.

Finally, the widely popularized right-brain, left-brain distinctions emphasize very important hemispheric differences and characteristics. The left hemisphere subserves syntactical language and, contrary to popular belief, is not logical but rather linear, with emphasis on details or particulars coupled with lack of appreciation for context or contour. The right hemisphere, on the other hand, appreciates the configurational, the gestalt, and the contextual, but is relatively unaware of details. These distinctly different processing patterns render each vulnerable to different types of errors and also require very different interventions and strategies for effective intervention.

Overall integrity of brain functioning rests upon the integrity of each of these areas and divisions working in concert with each other. Damage or dysfunction in one area, while having specific focal consequences in adults, also has implications for the system in entirety. What remains is not the deficits, but rather the unbridled, intact functions.

Right Hemisphere Dysfunction

Two defined patterns of learning disability appear to illustrate interesting parallels with neuropsychological processes and anatomical injury in behavioral disturbances in adults. In drawing such parallels, the implication is not that there are specific cortical personality sites, or that emotional disorders are site-specific, but that specific deficits and processing styles have important implications for functioning generally. With right hemisphere lesions in adults (with the left hemisphere relatively intact), serious problems in spatial organization (e.g. neglect and inattention) and contextual appreciation (e.g. lack of appreciation for contour) are evident, and often coupled with left side sensory deficits. These patients tend to deny

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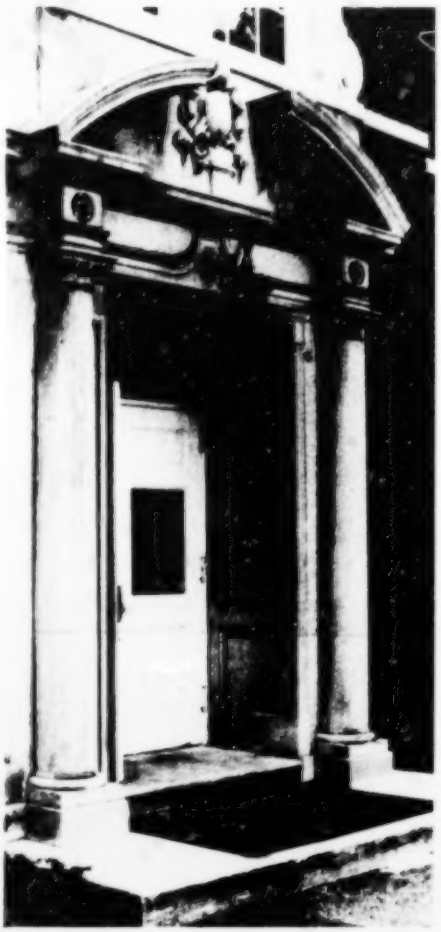

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A Neuropsychologist's View

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or minimize problems, are often childlike or irresponsible in their behavior, are unable to profit from experience or feedback, and lack awareness of having made mistakes. Consequently, self dissatisfaction is uncommon, although the people interacting with the patient are typically distressed, and the prognosis for emotional and behavioral recovery is rather grim.

Among the developmentally learning disabled, a portion of the population have anatomically analogous dysfunction in the right hemisphere. For these youths, spatial disorganization and cognitive processes are marred by an overly concrete, detail-burdened approach with concommitant lack of contextual appreciation. In this specific learning disabled group, lateralized left sensory deficits and tactile, kinesthetic psychomotor dysfunctions are common, and often EEGs are abnormal, with lateralized right parietal findings or biparietal findings (worse on the right). Described as a tendency to be physically rigid in infancy with delayed developmental milestones and distractibility, early on these children may be suspected of being mentally retarded. More typically, this disorder is not detected until much later, sometimes not even until later adolescence, because their speech and syntactical language develop well (as might be expected with intact left hemisphere functioning), and as verbal interactions increase, these are selectively rewarded by parental interaction.

On the other hand, motor awkwardness and underdevelopment affect these individuals throughout their lives and this early selective attention to speech typically results in relative neglect of motor functions, visual feature analysis, and age-appropriate play. Consequently, clumsiness persists and peer-appropriate interactional skills are not developed.

By first grade, visual feature analysis is quite poor and the child initially may give the appearance of a disabled reader. However, once the intact automatic left-hemisphere skills are engaged, word recognition and spelling may become very well developed. Yet reading comprehension lags, as do the understanding of verbal concepts and contextual memory because of lack of appreciation for context. Not surprisingly, attentional capacity and automatic verbal skills are reasonably good, but language emerges as loquacious, superficial, inappropriate, and tangential, described by some as lacking in content and intonation as "cocktail party" chatter. Arithmetic is likely to be poor, not so much because of inability to do basic calculations but rather a "pseudodyscalculia" based on inability to maintain the spatial aspects of written work, to carry or borrow between columns, or to understand word problems conceptually.

By adolescence these students with specific visual-spatial deficiencies may have seriously impaired interpersonal relationships, function with extreme inconsistency in social situations, and tend to fall back on routinized interactions. The quality of their affect and speech is likely to be flat and stereotyped (lacking in right hemispheric prosody and emotionality), with automatized, perseverative modes of relating (reflective of the untempered linear left hemisphere processing mode). They generally do not fully appreciate nonverbal forms of communication or social sequences, and many are virtually unable to deal with complex visual-spatial arrays, especially in novel or stressful situations.

Consequently, these teenagers act very inappropriately in social situations (particularly with peers), and are often withdrawn in social situations where their inability to appreciate and properly interpret a large number of fluidly changing cues, to attend and/or provide nonverbal communication cues, or to use logical nonverbal reasoning interferes with the adequate understanding of situational requirements and interactions. They seem unable to interpret other people's emotional reactions or to predict intentions, and may seem "out of place," insensitive and clumsy. Often they are branded as social outcasts, rejected not only by peers but by significant adults and even strangers. They understandably become withdrawn, anxious, and depressed. Over time they may be seen as more and more disturbed, evidencing deviant personality development, and, in extreme instances, even appear psychotic. Sadly, they may not recognize expressions of warmth or approval needed to develop basic security and an adequate self-image, a problem particularly amplified during the developmental demands of puberty in adolescence. In complex situations they fail to appreciate the consequences of their behavior and exhibit extremely questionable judgement, relying on overlearned (inappropriate) patterns and trite language, or simply decompensating. In sum, from a neuropsychological perspective, this group of learning disabled adolescents demonstrates profoundly impactful right-hemisphere deficiencies within the context of well-developed, modality-specific, routinized, and stereotyped left-hemisphere skills.

It is important to realize that lesions of the right hemisphere, with attendant impedence to appreciation of spatial organization (tactile, visual, kinesthetic), are potentially more pervasively impactful than comparable lesions lateralized to the left hemisphere. As for the adult with right hemisphere lesions, the inability to appreciate the magnitude of problems renders a poor prognosis for anything more than a marginal adjustment to life. Best benefit is gained by the cultivation of motor and visual-motor development during early childhood to minimize the discrepancy with overaccelerated verbalizations, but by adolescence these learning disabled

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Consequences of Lesions in the Brain

Some Consequences of Right Hemisphere Lesions

- Spatial disorganization and disorientation (neglect, inattention)
- Lack of appreciation for contour; difficulty organizing complexity
- Somatosensory insensitivity
- Fluent, verbose, but illogical speech, with poor prosody and rhythm
- Pseudodyscalculia, based on impaired spatial organization
- Impaired visual and visual-spatial memory
- Impaired facial recognition
- Irresponsible behavior and bad judgement
- Denial and unawareness of mistakes; cannot benefit from feedback

Some Consequences of Left Hemisphere Lesions

- Language disorders
- Impaired time-bound sequences
- Poor verbal fluency
- Impaired verbal memory
- Arithmetic disorders, possibly with loss of concepts and/or numbers
- Oversensitivity to impairments (anxiety, depression)
- "Catastrophic" emotional responses

youths simply do not grasp their social world and will probably require careful assistance and structure lifelong, and not be able to live independently. Like most teenagers, the desire to be independent and social is strong, so it is difficult to provide the structured social interactions of the younger child. But it is essential for these youths that the emphasis in adolescence be shifted from the traditional academic thrust to the development of social survival skills.

It appears that the most effective approach to working with the behavioral deficits of this learning disabled subgroup is in the development of social skills through reality-based role playing, subvocalization and verbal self-instruction. To develop better adaptive skills, a highly structured program emphasizing repetition, redundancy, and individualized instruction is essential. By introducing instruction in very small steps, adaptive cognitive strategies can develop, utilizing intact verbal skills for analysis and evaluation of problem-solving situations. For example, in the generation of overt descriptive statements with paraphrasing when necessary to ensure accuracy, the adolescent can "talk through" any task, eventually "fading" the overt statement and subvocalizing. In this way, "inner" speech can be cultivated to guide and orient behavior in more appropriate fashions. Anyone working with such an adolescent may be frustrated if not aware of his/her extreme difficulty in generalizing learning, with each situation treated as if it were unrelated to what is being taught. Again repetition and small steps are essential. Benefit also can be gained from visual-perceptual exercises (e.g., identifying missing salient detail; discerning embedded figures). Understanding of facial expressions, gesture and nonverbal behaviors need to be specifically taught. Such behavioral approaches are essential, and traditional verbally-oriented psychotherapy will inevitably prove trite, superficial, and unfruitful despite the youth's apparently well-developed (albeit content disordered) language skills.

Left Hemisphere Dysfunction

The second neuropsychological profile is that of left hemisphere dysfunction. In adults this typically manifests in some form of aphasia, with disturbances varying from total mutism, difficulty in articulation, syntactical and grammatical imprecision, or inability to comprehend what is being said. Emotionally, with insult primarily to the left hemisphere, the emotional picture is one of anxiety, oversensitivity to impairments, and often depression (greater when closer to the frontal pole). Under the particular stress of being confronted with their limitations, these people are vulnerable to "catastrophic emotional reactions," with acute disorganizing anxiety, agitation and tears which effectively disrupt the distressing situation and, once out of the stress, allow resumption of a more balanced demeanor. Because these patients are sensitively aware of their deficiencies, the potential for self-correction and compensatory action is great and the likelihood of an eventual satisfactory adjustment is good.

While language disorders in developmental situations are generally not as focal or localized as in the adult with an insult, the more subtle dysfunctions are nonetheless extremely impactful in all spheres of the child and adolescent's life, representing a social (and, if untreated, emotional and behavioral) as well as academic handicap. I wish to emphasize that the language disorders being addressed here are not merely the articulation disorders fairly common among small children, but represent more linguistic disturbance. In early years, language disordered children demonstrate basic skill difficulties across most academic subjects, and have particular difficulty following directions and comprehending instruction. Social problems are fewer in these early years, despite some degree of frustration with communication difficulties. By the upper grades, however, persistant comprehension difficulties interfere with orientation in the classroom (e.g. the student may "tune out" or be inattentive); written assignments and reading comprehension are likely to be poor; memory difficulties may be reflected in poor recall of materials requiring language analysis (e.g. sentence repetition and/or story passages). Speech tends to remain immature and impoverished, reading remains slow and labored, and automatized verbal skills have not developed.

When communication deficits persist into adolescence, disordered language may produce increasingly noxious social consequences. These youths are unable to acquire in-group slang expressions; are likely to misunderstand metaphors, jokes, puns, and sarcastic remarks; may be unable to follow verbal dialogues, and are typically poor in rapid humorous verbal interactions. Their own communications may be rambling, imprecise, fragmented, and/or tangential. It is no wonder they tend to be reluctant to contribute to conversations (e.g., saying "don't know" often as a means of avoiding responding), avoid the limelight socially, and may resort to face-saving strategy for hiding their confusion (e.g., nodding and smiling, or laughing with their peers). Often they fear being called on in class, may appear oppositional, and act out inappropriately. The adolescent may not yet have developed age-appropriate polite verbal social communications, and may unintentionally address people overdirectly and impolitely. Their inability to keep abreast of verbal exchange usually sets them apart socially, leaving the language disordered teen feeling alone and misunderstood. Ironically, these youths with poor psycholinguistic skills also have well-developed right hemisphere functions of visual spatial analysis, organization, and synthesis. In analyzing novel circumstances, they can be very systematic in organizing elements, in considering competing problem-solving strategies, and benefiting from informational feedback, and consequently can be flexibly adaptive. But this also means that, particularly in the middle and upper grades, these language disordered adolescents become sensitively aware of their academic and social failures, and of being different (the ultimate sin for the adolescent). Subtle emotional reactions are likely, including forms of aggression, anxiety, compulsiveness, frustration, rigidity, lack of motivation and withdrawal. Unable to adequately verbalize their feelings, their emotional distress may go undetected and unattended until some overt act serves as a cry for help. They rarely compliment, express support, or consider the feelings of others; more likely, they may project negative feelings, states or reactions, or be aggressive, rejecting and hostile. These children can be very hard to live with and teach. Psychotherapeutic intervention can be most beneficial in dealing with feelings of being dumb and undesirable, but complex communication training is invaluable in teaching communication skills which they will need in all spheres throughout their life.

Ideally, such language disorders should be detected and remediated before the age of ten or eleven, when the prognosis with language therapy is good; these children do not grow out of their problems. Beyond this age, however, a critical developmental period has passed and, from neuropsychological and language perspectives, the youth responds more as an adult; remediation is no longer possible, and only compensatory strategies can be introduced effectively. This places responsibility on people working with learning disabled youngsters to seek appropriate language evaluation when there is even a nascient suspicion of language disorder. Look for immature speech patterns that are simple, direct, imperative,

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Socialization Disorders

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We cannot afford to let children "sink or swim" socially. Peer relations, after all, are not luxuries in human development but necessities. Moreover, the research suggests that social relationships are stable over time. There is a positive correlation between a lack of social interaction in early childhood and later maladaptive behavior and mental health problems.

It should be noted, however, that not all adolescents with learning disabilities have concommitent social problems. The good athlete and the computer expert are more apt to be socially accepted in spite of their problems in the classroom. One study also found that youngsters for whom memory and retrieval are the primary symptoms also tended to be more competent socially, and accepted by the peer group.

In general, adolescence is not compatible with learning disabilities. The goal of most teenagers is to conform—to be like everybody else; so the mere fact of being in special classes or having special needs sets the learning disabled apart form their peers. They *feel* different, and in turn, are likely to be regarded as different by their peers.

In developing a theory of human development, Abraham Maslow, the humanist, postulated certain needs that must be met for people to learn and to grow. Two of those, particularly relevant for adolescents, are the feeling of belonging and having the respect of others. The young person with a learning disability may have trouble having those two needs fulfilled.

The analyst, Eric Erikson, described the major developmental issues in early adolescence, industry vs. inferiority, as centering around success in tasks society considers valuable. Two of those for this age group would be academic achievement and peer relationships. When these are hard to achieve, feelings of inferiority are likely to ensue. Self-esteem in adolescence is affected by the degree to which the individual feels significant, confident and powerful, and these typically are among the most difficult to accomplish for the learning disabled.

I'd like to consider some of the characteristics associated with learning disabilities to show the relevance for social competence as well as for academic performance. Adolescents with learning disabilities are a heterogeneous group whose problems are even more different from each other than from those without learning problems. The social disabilities among this group are also as varied as the strategies used to compensate for them. We cannot generalize about "a group" of those with learning differences.

Pictured above are Patricia Bricklin, Ph.D.; Moss Jackson, Ph.D.; Marilyn Bergman, Ph.D.; and Betty Osman, Ph.D. The Drs. Bergman and Osman, two of this issue's authors, were key presenters at last November's Hill Top Conference on Socialization Disorders of Learning Disabled Adolescents. Dr. Jackson, chief clinical consultant for Hill Top, joined the presenters and other experts in an afternoon forum chaired by Dr. Bricklin.

Nevertheless, there are a few characteristics that many seem to share in varying degrees and combinations. One is that adolescents with learning disabilities tend to be immature for their years. At fifteen, they seem more like twelve and at twenty they may act like typical teenagers. They are "young" in their behavior, language, and thinking. Many of them are a long way from the expected stage of formal operations postulated by Piaget. Their prolonged egocentricity and concrete thinking affect not only their understanding of academic concepts, but also their relationships with peers. In addition to the lack of cognitive sophistication, they lack social sophistication as well. They may not even understand the true meaning of friendship or what is required of intimate relationships.

Another consequence of immaturity is prolonged dependency on parents and other adults for social contacts and decision making. I am reminded of a boy of fifteen who asked his mother if he should take a Tylenol when he had a headache. He also relied on his parents to tell him when to study and when he could spend an evening with friends. When I discussed this with him, he said, "But I'm supposed to ask; they're my parents."

Sometimes the dependency becomes mutually rewarding, and parents need to feel needed by their children past the time when it is appropriate. Adolescents have to learn to separate from parents in order to graduate from home as well as from school. For some, this is a difficult task to accomplish. They might wish to be more independent but lack the skills to do so. I have known many who resented their reliance on adults, but were inadequately prepared or too afraid to venture out on their own socially.

A second characteristic affecting many young people with learning differences is the perceptual problems that prevent them from perceiving words and numbers accurately. The person who misinterprets or misreads written symbols may also misread or misinterpret non-verbal communication, body language and facial expressions. Much of our communication with others is conveyed not by *what* we say, but by how we say it. A fair amount has been written about social perceptual deficits, referring to difficulty interpreting the meaning or significance of other people's moods and behavior. In at least one study, adolescents with learning problems were found to misread or misjudge common emotions shown on facial expressions.

There is an expressive side to nonverbal communication as well. The person who interprets meaningful symbols incorrectly may also gesture inappropriately. We all know

teenagers who stand too close for comfort, talk too loud or too long, and are unaware of the disapproval they engender.

Peer acceptance has to do with language as well. Adolescents seem to connect with other people through verbal communication, as parents paying the telephone bill know all too well. The young person who has trouble with understanding or expressing language will have difficulty comprehending social situations as well as social studies questions. An LD teenager once said, "Some of us have little to say and say a lot, while others have a lot to say and can't say it."

Others seem to translate their native tongue the way most Americans translate French—self-consciously, word by word. They misinterpret idioms and figurative language that we use thereby missing the gist of a conversation or story. Consequently they seem "out of step" socially.

We could also speak about the social implications of impulsivity, memory problems and the erratic nature of learning disabilities, among other symptoms. The important thing to consider is that they are all part of a learning disability and can cause much unhappiness and frustration.

Social problems can occur on three levels. The first has to do with social cognition, i.e., a skill deficit. The young person lacks the knowledge of how to act appropriately or what is required socially. The second level has to do with performance. The adolescent knows what is required but personal needs interfere with acting appropriately in social situations. At the third level is the individual who has good social perception and can demonstrate it, but who lacks self-monitoring and the means of accurately assessing his/her own behavior.

As parents and professionals, we cannot assume that social competence and appropriate behavior will develop automatically. Like academic subjects, though, social skills can be taught. Some in the field claim that adolescents need some kind of social skills training, and that it should be a component of the total educational experience. Others feel social skills should only be taught as indicated. A need remains for more research and refinement of assessment and teaching strategies in the social domain.

For the present, there are ways to promote social skills among adolescents with social deficits. A few suggestions follow:

- Begin with the acceptance of the individuals. This necessitates understanding the nature of the learning disability as well as a realistic assessment of the accompanying social problems.

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Young Adult Asks, "What If My Child Inherits My Learning Disability?"

Carol Lang Lubin

I was fourteen years old when they finally figured out that I had a learning disability. It was from kindergarten on that I went through a barrage of testing, tutoring. . .and failing grades. It was clear that something was wrong, but everyone just kept telling me to "work harder."

Unfortunately, no matter how hard I tried, I couldn't keep up. After years of fighting to maintain a position at the *bottom* of the class, I was like a teapot boiling with frustration. By the time my parents and I finally found the help I needed, teachers had to deal not only with my learning disability, but also with one very bruised ego.

Though I am fine today, it's an experience I wouldn't wish on any child. Now that I'm married and contemplating having children of my own, I can't help being aware that they too may have a learning disability.

There are both advantages and disadvantages to having this great awareness. The advantage is if my child does show signs of having a learning disability I will know where to take him, how to interact with him, and will have real empathy for what he is going through. On the other hand, if I have a perfectly normal child, I may freak out every time he holds his book upside down, confuses his left from his right or has difficulty reading.

If a child of mine is learning disabled, I will know, through personal experience, to take action before any deep emotional scars are left or frustration levels soar. . .before it becomes apparent to other children, before he looks inadequate to others. No child need go through the emotional trauma of feeling—and eventually believing—that he is inferior. There are other ways for him to learn.

If a child is learning disabled, he certainly does not need to be labeled. Too many people do not understand what learning disabilities are, and think of it as mental retardation or a behavioral problem. People other than teachers and specialists have no need to know. At birthday parties, in Scouts, or on the soccer field, my kid is just like your kid. In fact, he may be more outgoing, sociable, or creative than others because he has refined these capabilities in lieu of other learning skills.

Most school systems still are not prepared to adequately diagnose a learning disabled child. Parents, themselves, have to be more aware of the warning signs of learning disabilities, and have to stand up for what they believe is right for their child. Even if it means going to sources outside of the school system, spending money, and maybe even offending the child's teacher, parents must persist until *they* feel comfortable with the counseling they are given. . .and the results. They must insure that their child is moving forward in a program that is appropriate for his needs, and above all, that his self-esteem is intact.

Carol Lang Lubin, a 1977 graduate of Hill Top Preparatory School, currently works in the advertising field in telecommunications. □

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The Editors

Neuropsychologist's View

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and informal, rather than subtle, complex, elaborate, polite. Note errors in verbal expression, difficulties in sentence comprehension and formulation, inability to follow directions or to respond to questions, and lack of adaptiveness to listeners' needs.

An understanding of brain-behavior relationships can contribute significantly to understanding not only the cognitive and academic difficulties of the learning disabled adolescent, but also enhances understanding of the social and emotional needs of these youngsters. Appreciation of the underlying disorder often has specific implications for effective and timely intervention, and the setting of appropriate goals.

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Socialization Disorders

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- Help the adolescent understand his/her own learning deficits. Only then can he/she become his/her own advocate, interpreting abilities and disabilities to others in his/her life.
- Help the adolescent find an area of strength or an interest to develop. Without this, many at this stage are both bored and boring. If it's sports in which he/she excels, this should be encouraged, even if it means less time for "studying". A positive self-esteem is worth it.
- Feedback is important. Adolescents need to know how their behavior is perceived by others. If we don't tell them, they may miss the subtle cues we provide inadvertently.
- Ongoing counseling and support through rap sessions or peer groups provide modeling, role playing, verbal exchange of ideas, and rehearsal of social skills in a safe environment.

Social learning is within the realm of educational responsibility, at home and at school. Although there are vast differences among learning disabled adolescents, all have the same needs for acceptance, approval, and belonging. Those who successfully make the transition from handicapped child to productive, well functioning adults, more often than not, have had supportive professionals and parents who were sensitive to their social and emotional needs as well as to their academic progress. Academic competence is crucial, to be sure, but to truly help this population, we have to educate the whole person for adulthood.

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□

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Psychologist Sees Adopted Children at Risk for Learning Disabilities

Janet L. Hoopes, Ph.D.

(This article is adapted from a paper presented at the national conference of the Association for Children with Learning Disabilities, New York, March, 1986.)

In the course of my longitudinal research on adopted children, it became apparent to me that although adopted children, compared to a matched sample of biological children, did not manifest significantly more emotional problems or identity problems, they did manifest some subtle problems in school according to teacher ratings. A review of other research on the adjustment of adopted children pointed to the same results.

This continuing thread of school difficulties in much of this research drew my attention. The problems were subtle—not real differences in achievement or IQ, but small behavioral difficulties with peers and with teachers; or perhaps teachers believing that the children were not living up to their potential. I looked more carefully at the two longitudinal studies in which I had been the principle investigator. What did the data show here?

The first study was completed at *Children's Aid Society of Pennsylvania,* where the agency was looking at the adjustment of families and children about 10-15 years post placement. The first volume of this study (Lawder et al, 1969) examined the functioning of the adopted families. The second volume (Hoopes, et.al., 1970) studied the functioning of the children, looking at two broad questions:

1. How does the adopted child compare in development with a biological child of similar age, sex and social class?
2. What information about both the child and family in which he/she is placed, known at the time placement is made, will be predictive of adoption outcome?

In order to study the child's adjustment, variables were selected so as to measure both cognitive and emotional functioning: intelligence, school achievement, teacher ratings, and personality measures (both objective and projective). Measures of these variables were obtained for both the adoptive children and biological comparison children.

In order to study the predictive question for the adopted child, several variables from Volume I—the study of parental functioning—were selected:

1. Quality of parenting as reflected in parental attitudes both at the time of placement and at the time of follow up. For example, attitudes toward infertility, marital interaction, warmth and affection expressed toward the child, consistency in decision making between both parents, and satisfaction in adoptive role were all rated from interview data on the parents.
2. Deprivation in the child such as multiple foster homes, poor emotional nurturing from the biological mother before adoptive placement, age at adoption placement.
3. Data on the biological family of the child.
4. Perinatal data such as prematurity, low birthweight, maternal complications at delivery, attempted abortion, poor prenatal care, etc.
5. Early behavioral individuality or temperament differences with the thought that the more "difficult" infant in the terms of Thomas et.al. (1963) might make for more difficult adjustment in later years.

A random sample of 100 children age 10-15 was selected from the larger sample of 200 families interviewed in the first phase of the study. These children were all caucasian children and all had been agency placed. This is important to remember when questions of generalization to other types of adoption are considered. A sample of biological children matched in age, sex and social class status was obtained from a suburban Philadelphia school system. The adopted children were tested in groups at the agency setting, while the comparison sample was tested in school classrooms.

What are the significant findings on the question of school adjustment? First there were no significant differences in IQ between the two groups of children; mean for the adopted group was 112.2 and for the comparison group 117.2. The distribution of scores on the personality measure were essentially the same for both groups. Likewise achievement test scores were not significantly different. The main area of difference was in teachers' ratings. The teachers had rated the children on six items: the level of the child's school work in relation to the class as a whole; the

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Adopted Children

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level of the child's school work in relation to own ability; the child's general attitude toward school; the child's attitude toward own school work; the child's relationship with classmates while at school; and the level of the child's overall adjustment. There were significant differences between adopted and control children on the teachers' ratings of overall adjustment and in the summed scores of all 6 items. The interesting finding is that the differences were in the well adjusted categories — good and excellent. A similar trend was found in the items rating the child's school work in relation to the class as a whole, child's school work in relation to own ability, and child's general attitude toward school. In each case the adopted child did not quite measure up to the comparison child or, in other words, was not doing as well in school as might be expected on the basis of ability. When intelligence was controlled for, it was the highly intelligent adopted children who were not rated "excellent" by the teachers in the same proportion as the comparison children were. The significantly larger number of control children in the "excellent" category of the teachers' rating of overall adjustment is essentially the same kind of finding obtained in Witmer et.al. (1963) in their study of independent adoptions in the state of Florida. The investigators in that study found significantly more control children in the highest categories of the teachers' ratings on leadership and popularity among classmates. However, these investigators found that most of the differences between adoption and control groups on the teachers' ratings disappeared when the age at adoption placement was controlled. This is not true in my study; the differences on the teachers' ratings are not related to age-at-placement.

Are there factors within the adoptive families rated from interviews at the *time of adoptive placement* which might be related to the children's functioning in school? Looking back at the early months of adoption, several interesting findings emerge which are related to later teachers' ratings. These variables are: the father's acceptance of the reality of no biological chidlren, and father's criticism of the child during the supervisory period. Correlations, while low, are all positive and significant. These findings on fathers suggest that infertility and inability to have biological children may present particular problems affecting the way fathers react to the adoptive child. Some substance is given to this interpretation by the fact that the father's ability to discuss infertility was relatively strongly correlated with the extent to which he was later critical of the child. ($r = .47$) The father's acceptance of the reality of not having a biological child was also also highly associated with the extent to which he was later critical of the child. ($r = .50$) These same findings were not true for mothers. Issues of infertility and lack of biological children bear particular relevance for certain adoptive fathers. Lack of resolution of and defense against negative feelings in these areas apparently lead to negative reactions to the adoptive child, which in turn have consequences for the child's later functioning.

Another finding of importance was the fact that parents' early expectations for the child's intellectual endowment showed several significant negative correlations with the later child functioning as rated by teachers. These were: the child's school achievement or work in relation to the class; the child's general attitude toward school; the child's attitude toward own school work; and the child's overall adjustment in school. These findings clearly suggest that unduly high expectations of adoptive couples for the intellectual endowment of the adopted child are associated with later negative attitudes toward school (as rated by teachers) on the part of the adoptive child. We also know this to be true in biological families — that too high expectations for achievement, especially when the child is not all that able, sometimes lead to frustration and tension in the child and thence poor behavior, rebellion in school or simply lack of motivation. (The child gives up.) What may be complicating the situation with adoptive families is that adopted children may, on the average, come from biological mothers with less intellectual capacity then the adoptive families in which they are placed. Scarr and Weinberg (1975, 1978) have found for example, that adoptive children resemble the biological parent more than the adoptive parent in intelligence. Other research studies of this kind (Munsinger, 1975 a, b, and Fisch, 1976) have also concluded that although the adoptive home can and does have the effect of maximizing potential, there is considerable resemblance between the adopted child and the birth parent from whom the child was early separated in terms of a variety of significant factors.

Turning to parental factors assessed at the *time of the follow-up study*, we found that the parents' ability to show compatibility in decision making regarding the child on issues of discipline, school and child rearing in general did relate to the teachers' ratings on the child's general attitude toward school, the attitude toward own school work, and the level of work in relation to the class as a whole. Thus the greater the role compatability between parents, the more likely that the child will be rated by the teacher as having a positive attitude toward school and toward school work, and the more likely it is that the teacher will rate school work well in relation to the general level of the class.

The correlations between parental variables and teachers' ratings, while low, consistently appeared throughout the study. We could find no relationship between perinatal factors and later teachers' ratings, intelligence or achievement. Nor did we find that differences in early temperament related to later functioning in school as judged by the teachers. The findings in this study confirm the importance of parental attitudes in the child's functioning, not a surprising finding considering all of the psychological research on parental effects on children's adjustment.

The second study was the *Delaware Family Study*, a longitudinal research project of the Children's Bureau of Delaware (Hoopes, 1982). This research has the advantage of being a prospective study, in that certain variables were selected before children were placed in an adoptive home, and then when the children were 2, 5, 8-12, and 16-18 years of age, the family and the children were studied. This study examined many facets of these families and children, but the focus of this paper is on how the adopted child functioned in school in comparison to a matched biological child.

From a group of 2-child families in the pool of adopted families, 47 girls were studied in their schools. (Girls alone were studied, because this particular research also looked at ordinal position and there was not a significant number of later placed boys to comprise a sample). A matching sample of nonadopted children was drawn from the classroom which each adopted child attended. This child matched the adopted child in age, grade, and school setting. Family structure was also much the same — that is, one older sibling, or a younger one. Among other measures administered in this school study, was the Bristol Social Adjustment Guides: The Child in School (Stott and Sykes, 1969). The focus of the Guide items is interpersonal rather than intrapsychic and most items were free of psychological jargon. The item choices include normal behavior descriptions and a normal option, "nothing noticeable," along with problem behaviors. The teachers are asked to circle specific behaviors that apply to the child in school and each teacher was asked to rate the school behavior of the target adopted child and two children other than the target child (but matched as closely as possible with that target child) in an effort to minimize focus on the target child. The schools were unaware of the

adoptive-nonadoptive comparison since the study was described as a longitudinal study of child development carried out by the college with which the authors were associated.

In addition to the teacher ratings, materials was also collected from the cumulative file of the target child. Here an attempt was made to ascertain the adjustment/maladjustment of the target child from teacher and staff comments; from achievement test scores; and from referrals for special services, such as counseling or psychological evaluation. No data could be obtained for the matched control child because of the difficulties of obtaining permission to examine a child's file. A sociometric measure was also administered in the classroom.

The findings on sociometric choice indicated that the adopted children were as well accepted by their peers as a group of comparison children matched for age and grade. Rates of referral for special evaluations or for special class placement (about 10%) did not exceed that usually found in the population of school children at large (about 10-14%). However, the adopted girls did receive from their teachers a significantly greater number of checkmarks for total problematic behaviors than did nonadopted children ($t = 2.90$, $p < .006$).

The results showed that adopted children were rated higher in anxiety with adults and hostility toward adults than their matched controls. However, relationships with peers did not appear to be significantly problematic. The number of restless and nervous habits was significantly higher, and the total problem score was higher. It should be pointed out that the mean number of actual problem behaviors was not high. Out of a possible 140 items indicative of problem behavior, the mean scores are 14.7 for the adopted group and 8.5 for the matched controls. Although there was a higher frequency of problems, it did not follow that the severity of problems was greater. In describing these children, the teachers checked very few statements that fall beyond Stott and Syke's cutoff for more severe signs of maladjustment. Therefore, it would be unfair to conclude that these were highly maladjusted children. These findings, just as those cited above, point to mild and subtle differences.

Do these teachers' ratings reflect bias on the part of the teachers? Or isolated findings on the children's behavior? Probably not. Correlating teachers' ratings with parental ratings on the child's behavior revealed that not only do the teachers see these children as acting out in school, but their parents also rated them higher in acting-out behavior at home. Correlations between all of the teachers' ratings and the parents' ratings on the Child Behavior Characteristics (Fanshel and Borgatta, 1965) factor of Acting Out ranged from .40 to .53 for both mother and father ratings. All of these correlations are highly significant. When teachers saw the children as anxious toward adults, the parents viewed them as overly dependent ($r. = .60$ for mothers, .37 for fathers). Where independent ratings were made of the family unit and these ratings indicated that the family was child dominated, the child was seen by the teachers as manifesting anxiety toward adults ($r. = .47$). When children were asked about how they see themselves in school, the child with poor self concept in school was rated by the teacher as high in hostility toward adults, high in restless and nervous habits, and high in total problem behaviors.

There is also some consistency between parent interview ratings made by trained interviewers and behavior in school. In those families where the mother's parental functioning was rated low, the child was rated in school as hostile toward adults ($r. = 32$) or dependent and withdrawn ($r = .39$). Where the father's attitudes toward adoption were rated as low by the interviewer, the child was seen as anxious toward adults in school ($r = .33$).

The Meaning of These Findings

Can we find any common threads through all of this research? Are there suggested though subtle behavioral characteristics of the adopted children which have a common theme?

One fairly clear finding is the importance of parental attitudes, particularly that of the father toward adoption and the acceptance of infertility, but also attitudes of both parents toward achievement, and agreement between parents on consistency in decisions regarding the child. Additional findings from the Delaware Family Study (Hoopes, 1982), where adoptive parents were compared to a matched sample of biological parents, suggest that adoptive parents present themselves as more affectionate and permissive than the biological parents. They appeared to express attitudes of fostering dependency in the child, and were less willing to admit irritation with the child or parental disagreement regarding child rearing. Anxiety regarding parenthood was significantly higher, particularly in adoptive mothers, when the children were very young (2 years). These attitudes in turn

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Adopted Children

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related to the age 5 assessment of the children who were found in general to be less confident and less willing and attentive in task completion.

One could also speculate about bias in teachers toward the adoptive child. I have noticed a significant bias in the public in general regarding adopted children, who are almost expected to be more disturbed by the fact of adoption alone. This expectation comes from the clinical literature on adopted children and families who have, in some studies, appeared more frequently in psychiatrists' offices for treatment. The root of the disturbance was thought to be found in the early separation of the child from the biological mother and the trauma which this supposedly created even in newborns placed for adoption shortly after birth. It is hard for the nonadopted person to imagine that adoption could be a satisfying and healthy alternative for the childless couple and for the child placed with them. Reflecting upon the attitude of the general public toward adoption, one 15½ year old boy in my recent study with Stein (Stein and Hoopes, 1986) on identity in the adopted adolescent poignantly stated, *"It's not adoption that is the problem but what other people think of adopted kids. They're always shown in movies as 'the druggie'."* (p. 90)

In the studies reviewed above, teachers supposedly did not know that adoption vs. nonadoption comparisons were being made. It is possible, however, that teachers were aware of the purpose of the study and that biases came through in the data.

I am more inclined to look more seriously at the kinds of behaviors reported by teachers and to try to examine other reasons for the behaviors exhibited by adopted children. The particular syndrome of behavior — nervous, restless habits; poor self concept in school; hostility toward adults (teachers); achievement not up to intellectual potential. What do these behaviors suggest? To me they suggest the kinds of behaviors manifested by children with some constitutional difference or some aspect of minimal cerebral dysfunction, or processing problems — call it what you will. But all are suggestive of the fact that these children may have learning differences which, in the face of frustration in school, manifest themselves in behavioral difficulties, mild or otherwise. Or they may have problems in social interaction from the earliest years on, as Osman (1982) has suggested from her work with learning disabled children. I have done no rigorously controlled study on the incidence of learning disability in the adopted child compared to a matched biological child. But I am following some hunches based on the research which I have quoted which suggests to me that the adopted child is at high risk for learning disability.

There is one epidemological study done in 1967 by Kenny, Baldwin and Mackie which lends some support to this hypothesis. This study was conducted at the Clinic for Exceptional Children in the Department of Pediatrics at the University of Maryland. The clinic operates as an evaluation and treatment center for neurologically handicapped children. The investigators noted an apparently high incidence of adopted children referred to this clinic — about 4% of their sample when about 1.5% would be expected on the basis of estimates of the number of adopted children in the population of the state of Maryland. In addition to seizure disorders which were diagnosed in this group of 39 children, a cluster of important behavioral symptoms were observed which confirmed for the authors the diagnosis of brain injury. The behavioral items described a symptom cluster which included hyperactivity, erratic attention span, emotional volatility, and defects in self control. Although intellectually the children measured in the average range with a mean IQ of 92 and a broad spectrum of childhood adjustment patterns, the authors were concerned that these were children "whose capacities for adjustment were continuously strained in accommodating to ordinary problems of life" (p. 25). From data supplied by the families, it was evident that these children had not sustained brain insult after placement for adoption and the early infant behavior reported by parents indicated that whatever cerebral injuries they had incurred probably took place prior to adoption, most likely in the prenatal or perinatal period. The birth records, where available, were mildly suggestive of nervous system injury. However, the authors were unable to document from sketchy records with many unknowns whether such injury occurred in utero. The most prevalent report of the prenatal period was the casual, incomplete or nonexistent prenatal care which the biological mother had received. The authors speculate about anoxic experiences which may have occurred in utero and hence been responsible for the disproportionate number of adopted children in their sample.

Although our data are only suggestive, it seems likely that in many cases the orginal context of the cerebral damage that adopted children show in their later development is to be found in an assessment of the events of prenatal life, a period from detailed inquiry by adoption procedures that have left few records. (p.28)

While I do not believe that I would characterize the difficulties found in school in the adopted children I studied as evidence of brain damage — that is a very strong word — I do believe that we may be witnessing some constitutional difficulties that had their origin in the prenatal period. Knobloch and Pasamanick (1960) have researched what they call the "continuum of reproductive casualty" which ranges from neonatal death to milder abnormalities such as speech and learning problems. It is my belief that adopted children may be at high risk for such difficulties because even today, mothers pregnant out-of-wedlock often do not seek prenatal care early in their pregnancy and may in fact have minimal care. Fortunately, many mothers are healthy and the fetus is also healthy, but it seems to me that the risk is greater here than in the welcomed pregnancy. Kadushin (1980) has summarized this point as follows:

"Research suggests that congenital factors may contribute to the problem (stresses in adoption families). Most adopted children are born out of wedlock to young women for whom this is the first pregnancy. Such a pregnancy is apt to be highly stressful, and some of the mother's tension and anxiety might adversely affect the fetus. Furthermore, such mothers are apt to get less adequate nutritional and medical care during the pregnancy and less emotional support. The higher mortality rate, the higher congenital anomaly rate, and the lower birth weight associated with such pregnancies . . . is confirmation of the stressful context of such a pregnancy for the child. One study of the patients at a pediatric hospital unit showed that a disproportionate percentage of adopted children had 'minimal brain damage' . . . This may be related to the finding, confirmed by a number of different studies, that when adopted children are disturbed, they are more apt to demonstrate aggressive, hostile, hyperactive behavior than other kinds of disturbed behavior." (p. 526)

In conclusion, while this latter part of the paper has emphasized the possibilities of constitutional differences in the adopted child leading to learning disorders, and other behavioral problems, I want to reemphasize the importance of parenting factors, as revealed in some of my research. The appearance of any developmental deviance in a child, behavioral or cognitive, represents a complex interplay of factors, genetic and environmental and it is not always easy to untangle the primary cause, if in fact it is fruitful to do so, since what parents and their children desire is help with such problems so that the children can eventually lead productive and satisfying lives.

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Classroom Management for Students with Auditory Processing Problems

Maxine L. Young, M.S., CCC-A/Sp

A learning disabled student who is identified as having an auditory processing/learning (APL) deficit faces the educational world with a potentially handicapping condition. In an oral-aural learning situation *any* auditory impairment or developemental disorder, be it mild or severe, can wreak havoc in the educational life of even very bright youngsters. Educators and hearing and learning specialists have long recognized the detrimental effects of permanent hearing loss and addressed the educational needs of this population with acoustically modified classrooms, highly trained therapists and teachers, and early identification programs.

Within the past decade, concern has been directed towards the child whose hearing sensitivity is normal, but which may temporarily fluctuate due to serious otitis media, a medical condition in which fluid and/or infection develops behind the eardrum, attenuating conduction of sound to the nerve. Research has shown even the mild, temporary fluctuations of hearing due to middle ear pathology impedes language learning and academic progress, particularly in young children. Many pediatricians, otologists, educators and learning specialists are now aware of the educational implications of this auditory learning problem.

The most subtle, difficult to identify, and seemingly elusive auditory learning problem is that involving central auditory processes. Parents and educators recognize the characteristic symptoms which often masquerade as hearing loss, even in very young children. The inefficient transmission of auditory stimuli through the central nervous system can cause youngsters to misinterpret similar sounding words, require them to ask for repetitions, cause them to misunderstand sequenced oral directions, and may affect language learning and education. Even at the preschool level, inattentiveness and auditory distractability may distinguish children with auditory processing problems from peers, but may be mistaken attributed to social immaturity. Formal and highly specialized audiological tests (central auditory processing tests) can be used to assess the processing abilities of children six years of age and older. A suspected processing disorder in younger children requires careful observation of the child's developing learning strategies and can be assessed using indirect language and cognitive tests. Caution must be used when attempting to determine if a very young child has a processing disorder, due to the wide range of variability in attentional and cognitive processes in normal children.

As a clinical audiologist/speech-language pathologist who has specialized in the identification, intervention and management of children with APL disorders, the impact of such deficits on a child's educational life has become increasingly apparent. While a number of therapeutic techniques are available to the speech-language clinician and learning therapist to be used with these children, there are also a number of techniques that can be satisfactorily used in the classroom. These are the ones that will be discussed.

APL problems can be classified, generally, into two categories. One category is comprised of children who are linguistically competent, but who are easily distracted by ambient sounds, have difficulty attending to speech in group situations, and are labeled as "poor listeners" or "daydreamers". In acoustically favorable conditions, when auditory distractions are minimized, and in tutorial experiences, listening and learning performance improves. However, in a child identified as being learning disabled who exhibits numerous learning differences, this problem may be educationally handicapping. Fortunately, individualized educational programs, resource rooms, and small group instruction typical of special education school minimize the detrimental effects of an auditory processing problem, particularly if the processing problem appears to be developmental.

It is the second category of APL disordered children that deserves particular attention and which may seriously affect education even in small group learning situations. This second group is comprised of children who exhibit both auditory attention deficits and are, more seriously, also language impaired. These youngsters have APL problems that are apparent even in tutorial situations which can interfere with communication in the classroom as well as in a social environment. Among the communication specialists, it is the audiologist who diagnoses central auditory processing disorders and usually the speech-language pathologist who plans and implements individualized therapy. However, it is the educator who deals with the APL disordered student in the classroom on a daily basis, and who is challenged with the demanding task of communicating with and educating these youngsters who misinterpret what is heard as well as what is read. Individualized therapy involves the use of many techniques which range from the skill-specific (perceptual deficit approach) to the broad-based metacognitive therapies.

The focus of this article is on the techniques and strategies that can be used in the classroom. These include a) environmental factors, b) instructional techniques and strategies, and c) learning styles of the students themselves. The continually interactive role of the learning environment, the teacher and the student must not be underestimated and must be kept in mind when planning the most efficacious educational program for the child with APL disorders.

One of the most effective ways of dealing with auditory processing problems, regardless of the etiology (hearing loss or processing disorder) is to consider the listening environment and the variables that can improve auditory learning. As a general rule of thumb, the fewer number of students, the smaller the room size, the use of sound attenuating features such as acoustical ceilings, and fewer windows and doors are all conducive to improved listening conditions. Although most classrooms have seating arrangements which maximize listening abilities, some also have "dead" spots or areas that reduce sound transmission. Therefore, the APL disordered child may benefit from being assigned a seat after several seats have been tried. In younger children, the teacher will probably have to judge the appropriateness of placement by observing behaviors. But adolescents and young adults can be observed and quesioned regarding the most favorable seating arrangement, which will usually be placement near the teacher. A most important consideration is maintaining the *same* seating arrangement throughout the school term and/or for an educational semester-trimester. Each room and listening environment requires a different "listening set". When a student is used to sitting in one seat in the room, the central nervous system adapts to that listening arrangement. For instance, the child whose seat is six feet from the heating ventilators will be better able, over time, to inhibit being distracted by the recurrent on-off sound produced by the ventilator. To move a child frequently within the classroom requires the child to have to develop a new listening set for each seating arrangement. Sameness, routine and structure are absolutely necessary factors to consider in the education of all children, but most particularly for the APL disordered child.

If a circular seating arrangement is used for instruction, the seats directly to the right and left of the teacher are probably the least

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favorable. Sound is best directed face-to-face and the best seat for the APL child is the one directly opposite but facing the teacher. This way the child can use facial and gestural cues to aid comprehension. An astute teacher will know where the noise generating areas of the class are and avoid these when considering placement of a child whose auditory processing problem interferes with learning.

Factors pertaining to the teacher are crucial to successful learning. Teachers of the learning disabled instinctively know that there is no such thing as being "too redundant". But the art of being successfully redundant depends on several things. First, the rate of speech should ideally be paced to the processing speed of the poorest listener in the classroom. Studies have shown that rate of speech can affect the degree of listening comprehension, with faster rates being least well processed. But prolonging the vowel sound within a word to reduce rate of speech can markedly distort critical coarticulatory acoustic features by which the brain decodes spoken language. The most effective way of reducing rate of speech is to increase pauses between words, and to prosodically group semantically meaningful phrases. One of the best ways to assess a teacher's speech rate is to record several hours of class instruction, then listen to the recorded speech while also listening to a talk show on the radio at equal intensity levels. Speech is the most distracting auditory stimuli and this technique will simulate an APL disordered child's listening ability so that self-monitoring may be more productive.

A question frequently asked by parents and teachers is whether talking louder makes listening easier. Again, the literature shows that loud voices, created by forcing the vocal folds together with abnormal tension and stress, distorts the acoustical properties of phonemes that are required for word identification within the central nervous system. The single most effective voice technique, assuming good room acoustics, is the well-modulated voice. That is, a voice that varies in loudness, pitch and rate with vocal emphasis on key words and phrases. Walk into the classroom of a teacher who consistently uses a louder-than-normal voice, and listen to the voice intensities and monitor the inattentiveness of the students. Then walk into the classroom of a soft-spoken teacher, whose vocal prosody and pitch varies from utterance to utterance and compare student responses in this classroom. The conclusion is that loudness creates even more loudness within the classroom and can be detrimental to auditory learning. Remember Mr. Rogers? Do you ever remember hearing him shout? Did he ever talk too fast? Do you realize how his vocal techniques so effectively communicated to the immaturely developed listening abilities of two three, and four year olds? He skillfully spoke to the listening levels and auditory maturation of his intended audience, a dynamic teacher technique that every teacher could and should use, particularly in dealing with APL disordered children.

At an instructional level, the use of grammatical transformations to increase redundancy will not increase oral comprehension, but indirectly increase the student's metalinguistic awareness. Speech directed to brain damaged and/or retarded children necessitates repeating misunderstood oral presentations. But the learning disabled child may be offended or embarrassed if there is a sense that a request for repetition is over-simplified. Therefore, the use of transformational grammar to repeat and restate at the student's level of intellect, particularly the APL disordered youngster, can provide a way of modeling oral grammar and indirectly show the child that there are many linguistic ways of conveying the same thought. For instance, a teacher may say, "First review your homework assignment, then start to do the problems on page 55." A request for repeated instructions could be made by saying, "The problem on page 55 may be done *after* you have reviewed your homework," with more emphasis on the word after, presented at a slower rate of speed, and uttered with eye contact with the student who requested the repetition. As a teacher of the learning disabled, you can be assured that of the total number of students in your class, a few may ask for repetitions but probably all of them will better understand what you have requested or instructed them to do the second time around.

Other techniques include orally stating the whole, when presenting the parts. On a daily basis, class-by-class, taking a few minutes of time to summarize and review where the last discussion ended, what the basic objectives for the present class discussion are, then systemically going through each detail, relating it to the general overview of the day, will help a student organize notes and significantly improve listening comprehension. By restating the day's objectives, redundancy and associative learning techniques are being used. The use of daily written outlines, whether pre-printed or written on the blackboard, will also increase organizational listening skills and learning habits.

Those innate attributes which the student brings to the learning situation are the ones that the educator must begin to work with. It is the responsibility of diagnosticians to identify, as best as is possible, within the framework of our knowledge of brain-behavior relationships, the adequately developed and deficient

Small classrooms, fewer numbers of students, and assigned, preferential seating, as in this English class at Hill Top Preparatory School, are among the techniques which can assist students with auditory processing/learning deficits.

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auditory processes. One of the most important that can be addressed in the classroom is that of auditory memory. The clinician and the teacher must know how information is represented in memory and how it is retrieved. The ability to remember what is heard involves so many simultaneous cognitive and perceptual processes that only basic processes will be discussed in terms of their influence on classroom learning.

In general, we categorize memory processes as being short or long term, as episodic, relating to the merging of many episodes which are stored as an autiobiographical reference, or as being semantic, which reflects general knowledge using language-based organization. However, most important is the assessment of the strategies used to organize information that is to be remembered. A thorough auditory-language processing evaluation will include information regarding the strategies a student uses during memory tasks. It is helpful for teachers to know if the child uses the recency effect, remembering the last item heard and recalled in this order, or if the student uses the more mature primacy effect, in which an attempt is made to recall information starting with the first thing heard. Does the student use *any* strategies, and at what point does the auditory memory begin to become overloaded? A question frequently asked is why material that has been "well learned" may be forgotten within a short time. One explanation may be that the child has used *recognition* rather than *recall* strategies in a given learning situation. Recognition is a relatively non-strategic task that usually involves maintenance rehearsal (holding items in short term memory with similar items to be remembered). Recall strategies, however, require coding rehearsal (i.e. the active relating of to-be-remembered short term retrieval only) and are a much less complex process than recall which involves coding, association, and organization of information. These skills can be taught as part of a metacognitive course or during the presentation of content material. This involves teaching the student *how* to remember, rather than *what* to remember. Subject matter, the linguistic complexity of what is being taught, and amount of information required to be memorized influences memory capacity and should be considered when teaching memory strategies.

It is also helpful to know how the student organizes information to be remembered, or if he/she is aware of his/her strategies (metacognition). Does the student use chunking techniques, grouping data into meaningful units? Does he/she use phonetic cues such as remembering items by using the initial consonants and grouping them alphabetically? Does he/she chunk information using melodic patterns during auditory rehearsal? Are tactile cues used, such as tapping fingers and feet while memorizing materials? Is the student aware of his/her strategies? These are but some of the ways to improve memory.

If a teacher knows how the student remembers auditory information, but feels that his/her strategies are not effective, then others can be suggested and tried. Offering a mini-course in memorization techniques using content material in the teaching process cannot only improve general ability to remember, but also teach the subject used in the course. The best content area teaching techniques will be of little value to a student who understands what is being taught, but who quickly forgets. A heightened awareness on the student's part of how best to remember and the teacher's knowledge of what techniques facilitate memory can minimize the necessity of repetition and redundancy that is both time consuming and sometimes frustrating to both teacher and student.

To suggest that remediation of auditory processing/learning problems occurs in isolation from other cognitive processes and strategies is a fallacy. Unfortunately, evaluation methods do focus upon specific abilities and processes, but are becoming more holistic due to the increased knowledge available about brain-behavior relationships. The most effective teaching situation is one in which the student's learning and auditory processing problems are identified and understood by the teacher and the child. This may require counseling so that the student recognizes areas that need improvement and that can be improved. Factors within the listening/learning environment, teaching strategies, and the knowledge that the student bring to the classroom in the form of previously learned content material or the processing and memory strategies he/she uses are interactive and should be treated as a dynamic process that involves the active participation of the student. The view that learning is the active responsibility, primarily of the teacher, is an outdated one and has prompted interest in metacognitive strategies and student centered educational programs. Such techniques can be successfull used by teachers in meeting the needs of learning disabled students who have auditory processing/learning problems. It will be through the cooperative efforts of diagnosticians, learning therapists, and special education teachers that the most successful educational programs will be developed in which students will experience learning success.

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Auditory Processing Problems

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But an awareness of a subtle auditory processing disorder in learning disabled students can make teaching and learning more enjoyable and successful if that disorder is minimized by efforts on the teacher's part and with active student participation.

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Adopted Children

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